

CHANGING TEACHERS' PRACTICES FOR INCLUSION: A CASE
STUDY OF FOUR TEACHERS PARTICIPATING IN A
SCHOOL/UNIVERSITY COLLABORATION

By

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By

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Tamar Franchette Riley

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This study described teachers' change in practices to accommodate students with academic and behavioral challenges as a result of their participation in school/university collaboration. Questions were posed regarding the roles of teachers' context, the collaborative group (TLC), and the participant-observer (reflective friend).

The four teachers taught at an elementary school in a large, urban district in the South. The context included a supportive administrator, a congenial yet noncollaborative and isolated environment, district and state pressure to improve students' standardized test scores, and Regular Education Initiative school designation.

The teachers' contexts influenced their practices. They were overwhelmed by the adoption of a new reading curriculum, had a standard view of curriculum that was reinforced by district and state

assessments, and were challenged by the diversity of learning problems. The TLC supported teacher change by providing a discussion forum through which a structured process for problem solving and questioning of beliefs and practices was implemented. The TLC also provided teachers access to research-based innovations and resources.

The reflective friend, who initially served as a teacher's aide, gathered data. The reflective friend's role as a participant-observer developed to include a teaching partner and coach, research interpreter, and facilitator for teacher reflection, problem solving, and efficacy. Data were collected by the reflective friend from 327 hours of classroom observations during a period of 2-1/2 years. Four interviews were conducted with each teacher, and minutes from 126 hours of meetings and workshops were maintained. Data were coded and categorized thematically according to event similarity.

All participating teachers made varying degrees of change in their classroom practices. Each teacher's instructional approach influenced that change. Teachers using a traditional approach were able to incorporate student-centered instruction, alternative instructional groupings, and refined assessment instruments. One teacher who was innovative constantly revised her practices to improve student learning and used more directed remediation resources to help students with learning problems.

CHAPTER 1 INTRODUCTION TO THE PROBLEM

For the past two decades, researchers have noted little change in the way teachers teach (Cuban, 1990; Fullan, 1993; Hargreaves, 1994b; Sarason, 1990; White 1991). Despite the surge of innovative practices, such as cognitive strategy instruction, phonological awareness, and integrated thematic instruction, teachers rarely use these practices in their classrooms (Adams, 1990; Elmore, 1996; Harris & Pressley, 1991; Kovalik & Olsen, 1998). Most classroom teachers continue to teach the way they were taught in spite of the compelling research evidence that suggests they should change (Elmore, 1996; Sarason, 1990).

Many proponents of school reform suggest that teachers' adherence to traditional practices will doom many children to failure, especially given changes in the student population. Significant changes in the student population suggest that, to succeed in school, many children will require innovative classroom approaches. To illustrate the current diverse student population, Fuchs, Fuchs, Mathes, and Simmons (1997) projected this scenario for the future:

Now picture this: 34 children in an urban third-grade classroom, one third of whom live in poverty. Six live with grandparents, and three are in foster care. Five come from homes in which a language other than English is spoken; two children do not speak English at all. Seven, six, five, three, two, and one are African American, Hispanic American, Korean, Russian, Haitian, and Chinese, respectively. Six are new to the school, and four will relocate to a different school next

year. Only five of the 34 students are at or above grade level in reading; 10 are two or more grade levels below. There is a 5-grade spread in reading achievement . . . two other students in the class have been physically or sexually abused. (pp. 176-177)

These students will require considerable support in general education settings because their sheer numbers overwhelm the resources available in specialized settings. According to Goodlad (1990) our nation has become increasingly diverse, which places enormous demands on teachers to redesign schools capable of meeting the challenging demands of society at large. Thus, schools and teachers are under increased pressure to accommodate more diverse students in general education settings. Educational researchers and staff developers need to know more about how to help teachers, especially general education teachers, address the educational needs of a diverse population (Elmore, 1996; Fullan 1993).

Over the past decade and a half, schools have been under increasing pressure to include students with disabilities, even those with significant disabilities, in the general education classroom (Gartner & Lipsky, 1987; Henley, Ramsey, & Algozzine, 1999; Salend, 1994; Smith, 1998; Turnbull, Turnbull, Shank, & Leal, 1998; Will, 1986). Including special education students in general education classrooms has only made matters more complicated for general education teachers (Gersten & Woodward, 1990; Sailor, 1991). Previously, special education had been thought of as a place where teachers transferred their most difficult problem students into the hands of experts (Gersten & Woodward, 1990). Once students were placed in special education, rarely were they returned to the mainstream (Gersten & Woodward, 1990).

For teachers, the inclusion of so many diverse students in a classroom presents enormous challenges. For example, teachers typically expect to use grade-specific curriculum for all students in their classroom (Pugach & Warger, 1996). However, students with cognitive disabilities may have difficulty succeeding in grade level curriculum and will need teachers to adapt the curriculum to meet their individual instructional needs. Differentiating the curriculum and making modifications and accommodations have typically not been within the scope of general education teachers' responsibilities. Additionally, teachers have more behavioral problems in their classrooms, and they are ill equipped to deal with them (Landrum & Kauffman, 1992). In the past when teachers encountered such behaviors, they typically referred students to other school personnel; increasingly they are being asked to address these challenges in the mainstream (Salend, 1994).

Although many general educators support the concept of including students with disabilities in general education, they have reservations about its actual application (Baker & Zigmond, 1995; McIntosh, Vaughn, Schumm, Haager, & Lee, 1993). General education teachers have to make adjustments in their teaching practices to meet the challenges presented by such a diverse student population (Zigmond & Baker, 1990). Teachers' reservations stem from what they perceive as lack of support for making adjustments. In a literature review on teachers' attitudes toward mainstreaming, Scruggs and Mastropieri (1996) concluded that most teachers supported the principles behind mainstreaming although many indicated personal hesitancy about providing services to students with disabilities. They had concerns about the

need for more time, training, personnel resources, and materials, as well as reduced class size. Other researchers have found that general education teachers feel ill-prepared to teach students with disabilities (Vaughn, Schumm, Jallad, Slusher, & Saumell, 1996) primarily because they find it hard to manage curricular adaptations (Baker & Zigmond, 1990; Schumm & Vaughn, 1995; Vaughn & Schumm, 1994). Teachers' concerns about their preparation make sense given that general education teachers have a good understanding of content but limited knowledge of learning problems and the accommodations and strategies necessary to include special needs students (Pugach & Warger, 1996).

Researchers examining inclusive classrooms have found that teachers' concerns about preparation are well founded. Zigmond and Baker (1990) reported that even when teachers willingly participated in inclusive efforts, their instructional styles were not compatible with the principles of inclusion. Teachers planned and instructed students as a whole group, making little accommodation for individual differences. Baker and Zigmond (1995) conducted case studies in five different states to determine the effectiveness of inclusive programs for students with mild disabilities. After observing classrooms that district administrators identified as examples of successful inclusion, the authors concluded that definitions of success were based on students needing little or no accommodation. Baker and Zigmond questioned general education teachers' ability to include students when they were not providing individualized and specially designed instruction. In a similar vein, McIntosh et al. (1993) investigated teachers' planning practices and found that teachers made few instructional adjustments. If classroom teachers are

to change how they teach so as to accommodate difficult students, they will need staff development.

Current Practice in Staff Development

Successful inclusion requires teachers to learn innovative practices to meet diverse student needs. Radical changes in teachers' practices, however, are unlikely given the difficulty of change and the nature of current staff development practices in schools (Leiberman & Miller, 1991; McLaughlin, 1991). In most staff development efforts, teachers typically learn about innovations outside of their classrooms with little follow-up or feedback. Staff development has generally taken a "one size fits all" approach to educating teachers about effective practices for inclusion. For instance, districts often provide one-shot workshops that give teachers general information about disabilities and some teaching tips for working with students (McLaughlin, 1991; Tillema, 1995).

In recent years, researchers have advocated that teachers' roles must be reconceptualized to make a lasting impact on teachers' practices (Hamilton & Richardson, 1995; Joyce & Showers, 1988; Sparks & Loucks-Horsley, 1990). In a literature review on staff development, Sparks and Loucks-Horsley (1990) concluded that effective staff development should be comprised of (a) schools with norms that support collegiality and experimentation; (b) district and building administrators who clarify goals and expectations and actively commit to and support teachers' efforts to change their practice; (c) school reform efforts that are strongly focused on changes in curricular, instructional, and classroom management practices with improved student learning as the goal; and (d) adequate and

appropriate staff development and follow-up assistance that continues long enough for new behaviors to be incorporated into ongoing practice.

Until now, staff development has neglected factors such as individual teachers' knowledge and beliefs or personal ability (Showers, 1990). Although we know that teachers' beliefs play a powerful role in their adoption of an innovation, rarely are entering levels of knowledge and personal beliefs addressed as part of staff development (Richardson & Anders, 1994; Stein & Wang, 1988). Staff development has also been delivered in ways that do not consider teachers' ability to implement changes (DuFour, 1997; Fullan, 1991). Trainers make faulty assumptions about teachers' abilities to understand, commit, and reflect on new teaching practices and wrongly assume that teachers can make substantial changes without personal support. For teachers to change practices as inclusion requires, professional development will have to be reconceptualized. At this point, there are few research studies describing efforts to restructure professional development for inclusion.

How Special Education Research Has Responded to These Issues

In recent years, special education researchers have become involved in training general education teachers who work with students with disabilities. Knowing that the teachers find staff development ineffective and that research often does not translate into practice, researchers have attempted to create training opportunities that result in sustained changes in practice. As a result, common elements of best practice in professional development have emerged. In my review of the literature on special educators working with general education teachers, I found 10 studies that described effective professional development. In these studies, researchers provided teachers (a)

information relevant to their needs, (b) opportunities to receive feedback from an observer, and (c) collaboration or consultation between special education and general education teachers and researchers.

First, as a result of working with researchers or special education teachers, teachers learned new practices specific to their personal needs (Boudah, Deshler, Schumaker, Lenz, & Cook, 1997; Fuchs, Fuchs, Hamlett, Phillips, & Karns, 1995; Gersten, Morvant, & Brengelman, 1995; Marks & Gersten, 1998; O'Connor, Jenkins, & Leicester, 1992; Pugach & Johnson, 1995; Stein & Wang, 1988; Tillema, 1995; Vaughn, Hughes, Klingner, & Schumm, 1998; Voltz, Elliott, & Harris, 1995). In these formats, teachers learned about instructional accommodations for individual students (Marks & Gersten, 1998; O'Connor et al., 1992; Pugach & Johnson, 1995), small groups of students (Boudah et al., 1997; Gersten et al., 1995), and whole classes (Fuchs et al., 1995; Stein & Wang, 1988; Tillema, 1995; Vaughn et al., 1998; Voltz et al., 1995). In some cases, researchers asked participants what areas of the curriculum they had concerns about when including diverse learners and then responded with innovations to address those subjects (Vaughn et al., 1998). Also, to increase the likelihood that teachers would use innovations, researchers chose innovations that were easy to use and implement (Fuchs et al., 1995; Gersten et al., 1995; Vaughn et al., 1998).

Second, many of these professional development projects provided observation and feedback through meetings with researchers (Boudah et al., 1997; Fuchs et al., 1995; Vaughn et al., 1998) or special education teachers, who acted as consultants (Gersten et al., 1995; Marks & Gersten, 1998; O'Connor et al., 1992; Pugach & Johnson, 1995; Voltz et al., 1995). All of

these projects lasted for at least a year, with one lasting for two (Boudah et al., 1997). In these studies, teachers met on a regular basis either to collaborate with a researcher or consult with a special education teacher about observations in their classrooms. The special education consultants observed the general education teacher, provided feedback, and suggested interventions to improve instruction (Gersten et al., 1995; Marks & Gersten, 1998; O'Connor et al., 1992; Pugach & Johnson, 1995; Voltz et al., 1995). In some of these consultations, specific scripted processes were used (Pugach & Johnson, 1995; Voltz et al., 1995). Occasionally, researchers worked directly with teachers, providing them with assistance in implementing the innovations. They then debriefed with teachers about specific problems and successes (Fuchs et al., 1995; Vaughn et al., 1998). In other cases, the observer provided teachers with student assessment data that helped teachers to understand students' response to instruction (Fuchs et al., 1995; O'Connor et al., 1992; Vaughn et al., 1998). With researchers' assistance, teachers used student data as a basis for implementing changes in their instruction. Teachers selected interventions to implement after considering the types of problems students had. Overall, the results of these studies underscored the importance in of in-class observers: They provide teachers with feedback on students, problems, and implementation success, and they offered them suggestions about how to solve classroom problems.

Third, teachers received ongoing support in their development of new practices through interactions with observers (Boudah et al., 1997; Fuchs et al., 1995; Gersten et al., 1995; Marks & Gersten, 1998; O'Connor et al., 1992; Pugach & Johnson, 1995; Vaughn et al., 1998; Voltz et al., 1995). In such

studies, teachers' collaboration with one or two individuals focused on solving problems of practice in their classrooms. In one study, Boudah et al. (1997) used group collaboration between teachers and researchers in which teachers learned about a comprehension strategy. Teachers reviewed videotapes of their teaching and talked about how well their practices matched the innovation they had learned. Researchers in this study also asked teachers to think about individual students with special needs when they planned for instruction. As a group, teachers were able to generate ideas about how to accommodate individual students; they also received ongoing support in their efforts to implement new practices. Reflection within a group provides teachers support to experiment and develop new practices.

In sum, general education teachers learned about information that was relevant to their needs for teaching students with disabilities. They also had interaction with an outsider; either a researcher or consultant watched them implement new practices and then provided them feedback. Throughout the professional development experience, teachers received ongoing support in their efforts to learn new practices.

Lingering Gaps

In spite of the efforts made in professional development to provide support for learning inclusive practices, teachers have not always used them and sustained their implementation. In some cases, teachers reported that innovations were complicated to use (Stein & Wang, 1988). In others, they chose easy-to-implement innovations over ones that were more complicated (Fuchs et al., 1995; Marks & Gersten, 1998; Vaughn et al., 1998). Even when teachers learned about multiple strategies and innovations that had proven

helpful to their students, rarely did they use them consistently after support from the outsider ended (Fuchs et al., 1995; Vaughn et al., 1998). Observers provided teachers motivation to engage in new practices by providing them assessment data on their students as part of their observations (Fuchs et al., 1995; O'Connor et al., 1992; Vaughn et al., 1998). However, teachers did not continue to collect assessment data on their students once outside involvement had ended.

Critical feedback from an outside observer can help teachers to reflect about their practices. Outside observers can assist teachers in their acquisition of new practices by providing them demonstrations and assistance in their initial attempts at change. When observations are discontinued, teachers typically get no critical feedback, and as a result, teachers may not see or understand problems that arise. To complicate this problem because the outsider is no longer involved, teachers do not have anyone with whom to problem solve. Most studies focused on temporary assistance rather than on techniques for teachers providing critical feedback to peers. Teachers were afforded consultation (O'Connor et al., 1992; Voltz et al., 1995), coaching (Gersten et al., 1995; Marks & Gersten, 1998; Pugach & Johnson, 1995), and researcher support (Fuchs et al., 1995; Vaughn et al., 1998) for periods up to 1 year. Only in one case (Vaughn et al., 1998) did researchers go back the following year to determine if teachers had implemented practices at the same level as the previous year. Not surprisingly, Vaughn and her colleagues found that they had not done so. Providing teachers with intense support through observation, feedback, and

assessment for 1 year did not guarantee continuing implementation in subsequent years without support for doing so.

Finally, teachers were presented uniform innovations (Fuchs et al., 1995; Stein & Wang, 1988; Tillema, 1995; Vaughn et al., 1998) or ones that were at odds with their perspectives of teaching and learning (Marks & Gersten, 1998; O'Connor et al., 1992). These studies established that teaching the same innovations to a group of teachers would not guarantee that they would implement them to the same degree. Teachers have different motivations, interests, needs, and beliefs that may inhibit or facilitate their learning (Vaughn et al., 1998). Teachers need to learn innovations that are appropriate for their needs and that match their beliefs. When special education consultants work with individual teachers to accommodate students with disabilities, they need to suggest strategies that are consistent with teachers' frameworks for teaching and learning.

Consultants must also take into consideration teachers' concern for the whole group (Marks & Gersten, 1998; O'Connor et al., 1992). Students who require accommodations are just one of many concerns for teachers. For teachers to implement an innovation effectively, they have to understand the innovation, believe that it will be effective for most of their students, and see how it will fit within their current routines. For professional development to be effective in assisting general education teachers to implement inclusive practices, we need to have a better understanding of (a) how to provide supportive structures for learning that can be sustained when outside involvement has ended, (b) how to provide innovations that are compatible with individual teachers' frameworks for teaching and learning, and (c) how

to address teachers' concerns for all of their students while helping them think about students' individual needs.

Contribution of My Study

A review of the existing special education staff development literature revealed several problems; chief among them is the lack of ongoing support for participating teachers. In the present study, I attempted to avoid this problem by supporting individual teachers' learning and their subsequent adoption of more effective instructional practices. Teachers received support through collaboration with their peers and feedback from an outside researcher. Part of the design of this study included procedures for tracking teacher change as levels of support from the outside researcher changed.

Many studies in general education describe the group change process, yet change occurs also with the individual (Guskey, 1994). Therefore, the need also exists to understand how individuals are affected in the process of change (Loucks-Horsley & Roody, 1990). Teachers may voluntarily participate in a staff development program, learn the same innovations, and yet make different degrees of changes. Deford (1993) stated that understanding a teacher's ability to change requires an analysis of teachers' beliefs, the context of teaching and learning, and how they both relate to the practices implemented. In her study of teachers learning Reading Recovery, Deford found that instructional practices and beliefs about reading influenced the teachers' learning. She concluded that researchers needed to understand the risk that teachers take in rethinking traditional practices and replacing them with unfamiliar techniques (Deford, 1993). Genuine changes in instruction will occur when teachers are able to think differently about what

is going on in their classrooms and then incorporate new practices that match (Richardson, Anders, Tidwell, & Lloyd, 1991). Outside researchers who act as critical friends can provide teachers with the opportunity to reexamine their beliefs, develop understandings of innovations, and develop skill in their use (DuFour, 1997). Costa and Kallick (1993) defined the critical friend as one who

provides feedback to an individual—a student, a teacher, or an administrator—or to a group. A critical friend is a trusted person who asks provocative questions, provides data to be examined through another lens, and offers a critique of a person's work as a friend. (pp. 49-50)

In spite of the evolving research on effective professional development, few studies exist that provide rich descriptions of teachers involved in collaboration with a critical friend. Equally absent from the literature are studies of general education teachers involved in professional development efforts aimed at improving the inclusion of students with disabilities. Given the current state of instructional practice in inclusive classrooms, researchers need to have a better understanding of how effective professional development efforts can be designed and implemented to help teachers develop inclusive practices.

Purpose

The purpose of my study was to describe the individual change process of teachers involved in a collaborative learning group with university researchers. Within the context of the learning group, one of the researchers acted as a reflective friend. The term reflective friend is used instead of critical friend to distinguish between one who prompts teachers to reflect on their practices as opposed to one who critiques practice. The reflective friend

assisted members in addressing dilemmas they encountered while instructing and managing high-risk learners through questioning and problem solving. The reflective friend, as part of the collaborative group, worked to help teachers recognize conflicts in their teaching and to develop resolutions to those conflicts by incorporating effective teaching strategies and innovations. In addition, the reflective friend provided opportunities for reflection on and evaluation of new practices.

Through careful documentation of the change process, I addressed the following research question: Can general education teachers collaborating with university researchers change their practices to include students with academic and behavior challenges? The following subquestions helped to focus the study:

1. How does teachers' context support or hinder teacher learning?
2. What role does the collaborative group play?
3. What role does the reflective friend play in this process?

Design of the Study

Qualitative research methods were used to gather and analyze data. Data were collected on four teachers who participated in a collaborative teacher learning group, which is referred to as a Teacher Learning Cohort (TLC), from February 1997 to June 1999. Data included (a) observations of the teachers' classrooms; (b) documentation of collaborative group meetings and workshops; (c) notes from conversations with individual teachers; (d) interviews concerning teaching practices, difficult students, and the learning process; and (e) action plans in which teachers documented the types of interventions and strategies they implemented in their classrooms. Relevant

artifacts were also collected to add to the richness of data. These artifacts included newspaper clippings about the TLC, teacher-made products, and one teacher's description of the TLC.

Definition of Terms

This study described teachers working with researchers to solve challenging problems that occurred in their classrooms. These teachers worked together as a group to help each other meet academic and behavioral challenges. The following terms are used throughout the dissertation.

Staff development is used interchangeably with the term professional development and understood to mean processes that improve job-related knowledge, skills, or attitudes of school personnel.

Innovation is any idea, product, or process that calls for changes in behavior, beliefs, or understanding as a result of participation.

Framework is teachers' understandings, knowledge, beliefs, and practices that influence their teaching and learning.

Inclusion is the full-time placement of students with disabilities in general education classrooms, where traditional support services are brought to the child. Inclusive classrooms may be characterized as communities where all students are valued and are engaged in learning.

Collaboration is two or more individuals committed to working together for a previously agreed upon purpose. School/University collaborations involve teachers and researchers who work together for a specific purpose.

Teacher Learning Cohort (TLC) is a specific name for a single school/university collaboration. The TLC may be characterized as a group

that regularly met to discuss problems of practice, generate solutions to those problems, and report the results of attempts to solve the problems.

Reflective friend, in this study, is an outside special education researcher who worked with a collaborative group of general education teachers to change their practices. The reflective friend observed and provided feedback to teachers about their current practices and the new practices they implemented. The term reflective friend is used instead of critical friend to emphasize the role of helping teachers reflect about their own practices as opposed to offering a critique of their practices.

Possible Uses of the Results

This study is a contribution to the small body of literature focusing on teacher development of inclusive practices. The focus of this study was to document the change process and, in particular, the role of the reflective friend, the collaborative group, and the teachers' context in the process of change. The results of this study will contribute to an understanding of how individual teachers change and the influence that teaching context and external agents have in that process.

The results of this study may aid teacher education professionals in developing strategies for supporting teachers' adoption of inclusive practices in the general education classroom. Teacher educators and staff developers may find the framework helpful in guiding their future work with teachers. Finally, researchers will gain additional knowledge of how to strengthen their relationships with individual schools, teachers, and students.

Limitations

There are two main limitations of this study that must be taken into consideration when interpreting the results. First, because of using case study methodology, only a small number of teachers could be included in the study. Case study research requires the researcher to provide rich descriptions of the phenomenon; therefore, an intensive amount of time is focused on a particular interest--in this case, four teachers learning inclusive practices. The time involved in observing, interviewing, and debriefing the participants was the chief reason I limited the number of participants to four.

Second, findings are specific to the four participants, the TLC group, and the school at which the study took place. Caution should be exercised when applying the results to any other population or context or when drawing general conclusions about the results. The present study does, however, provide insight into the change process, the role of the reflective friend and the collaborative group, and the influences of teachers' context at one school. Specific descriptions of the participants, the school, and the work of the TLC may allow other researchers to make comparisons with other, similar circumstances. The reader, therefore, must determine how useful or applicable the results of this study are to his or her particular situation.

CHAPTER 2 REVIEW OF THE LITERATURE

The focus of my study is to describe general education teachers' use of inclusive practices and how those practices changed through their participation in a collaborative learning group with university researchers. Issues relevant to my study are the roles of the collaborative group, reflective friend, and teachers' context. Typically, teachers learn about new ideas through professional development programs. For professional development to be meaningful to its participants, specific elements need to be in place to provide them with relevant experiences and information. Elements of professional development addressed in this literature review are (a) practicality of the innovation, (b) demonstration of and feedback about the innovation, (c) collaboration as a means for teacher development, and (d) personal qualities of teachers that are important for change.

This chapter is divided into three major sections. First, I describe the selection criteria for the inclusion of studies. Second, I summarize the teacher change literature through the discussion of four essential components of professional development. Finally, I conclude with a discussion of the issues that are important to resolve when working with general education teachers who are learning inclusive practices.

Selection Criteria for Relevant Literature

Studies considered for this literature review met certain criteria. They were empirical and included descriptions of participants, methodology, data analysis, and findings. The literature search came from two data bases: ERIC (1984-1998) and Education Index (1984-1998). The following terms were used to conduct the search: teacher, change, innovation, research, practice, collaboration, teacher assistance teams, collaborative consultation, staff development, university, and study. All studies included for this review were published between 1984-2000.

I identified 11 books, 46 journal articles, and 21 professional conference presentations for a total of 78 studies. Studies were excluded from this review if (a) the study did not address either collaboration or teacher change in beliefs or practices, (b) the authors' conclusions were general, vague, or lacking rigor, and (c) findings were not clearly stated. Table A-1 (see Appendix A) presents a list of 36 studies that specifically addressed change in teachers' practices as a result of participation in professional development. The table provides information on the author, participants, methodology, and findings.

Conceptual Framework for Teacher Change

This review considered studies that described a teacher or group of teachers that participated in learning a new innovation and the changes in practices, structures, or quality of their job that resulted. Specifically, studies had to document how a teacher developed (a) new knowledge or practices, (b) structures in their environment (e.g., team teaching, interdisciplinary planning), or (c) support, trust, or confidence as a result of the innovation.

Studies were also included if changes in teacher practices occurred as a result of greater collaboration in the environment.

Researchers in education have advocated that creating changes in teachers' practices can occur through meaningful professional development that includes specific factors to promote teacher learning (Gersten & Woodward, 1990; Hamilton & Richardson 1995; Hargreaves, 1994a; Joyce & Showers, 1988; Sparks & Loucks-Horsley, 1989). These factors include (a) practical, understandable, and concrete innovations, (b) outside perspective, (c) collaboration, and (d) teacher readiness for change. Learning occurs when the specific factors are embedded in an authentic context and is sustained over time. Professional development programs described in this review were either a one-time workshop or an on-going project. All the studies addressed one or all of the four factors that create teacher change.

Practical, Understandable, and Concrete Innovations

Gersten and Woodward (1990) used the term "reality principle" to emphasize the importance of teachers learning in a natural context innovations that are practical and useful to their personal needs and interest. If innovations are deemed impractical, unmanageable, or complicated, teachers will abandon their use. Just explaining the research behind the innovation is not enough for teachers to incorporate it into their classrooms (Gersten & Woodward, 1990; Richardson, 1996). Teachers incorporate new practices when they are able to see (a) the practicality of the innovation, (b) the match between the innovation and their teaching style and beliefs, and (c) concrete examples of application.

The Practicality of the Innovation

Teachers consider their time valuable and want to implement innovations that enhance student learning. Three issues of practicality are important to consider. First, if teachers learn new practices that are feasible to incorporate into their teaching repertoire, then they will more likely sustain their use (Gersten & Woodward, 1990; Fullan, 1982). Teachers need to understand how to implement the innovation, how it will benefit students, and how it fits into their current routine. Failure for a teacher to understand the logistics of the innovation will result in little or no change (Briscoe & Peters, 1997; Gersten et al., 1995; O'Connor et al., 1992; Prawat, 1992; Stein & Wang, 1988; Tillema, 1995; Vaughn et al., 1998).

In an attempt to understand teacher success in implementing innovative programs, Stein and Wang (1988) studied 14 teachers whose schools were implementing the Adaptive Learning Environments Model (ALEM). Teachers were assessed in their success in implementing 11 critical dimensions of ALEM. In two particular areas--interactive teaching and creating and maintaining instructional materials--teachers had more difficulty implementing the procedures and did not reach the criterion for mastery. These teachers did not reach mastery because they had difficulty managing and understanding all the components. The authors concluded that "some dimensions appear to be easier to improve on than others" (p. 179). Overall, innovations must be feasible and easily implemented for teachers to find value in them.

Second, teachers have to see demonstrable changes in their students to find value in innovations. As teachers see students improve academically,

they become committed to their change efforts (Courtland & Welsh, 1990; Englert & Tarrant, 1995; Fuchs et al., 1995; Lipman, 1997; McIntyre & Kyle, 1995). In a 3-year period, Courtland and Welsh (1990) described the evolution of an elementary teacher in the implementation of a writing process approach. In the first year, the teacher used one component of the program and saw little improvement in student work. After consulting with literacy experts, he committed the next year to implement additional components of the program. As he saw students improve in their writing ability over the second year, he decided to implement the complete program in the third year. He then became the writing expert in his school and assisted other teachers in implementing process writing into their instructional routines.

Innovations have to show improvement from what typically occurs in classrooms before teachers will adopt them into their instructional routines. Generally, teachers who implement changes and see that the innovation improves student learning will want to continue in the development of their practices (Englert & Tarrant, 1995; O'Connor et al., 1992; Richardson & Anders, 1994).

Third, not only must innovations demonstrate student improvement, but also they must address the needs of most students in the class, and this is particularly true for general education teachers working with students with disabilities. General education teachers need to understand how innovations benefit most of or all their students or they will not use them (O'Connor et al., 1992; Vaughn et al., 1998). For instance, in a year-long teacher-researcher professional group, Vaughn et al. (1998) found that general education teachers who were including students with disabilities wanted to

learn instructional practices that could be used with the whole class. Teachers wanted to learn strategies that would benefit their students with learning disabilities and enhance the learning of the other students.

Strategies that benefit few students are not viewed as valuable by a teacher concerned with the whole group. Because of this view, when general education teachers receive classroom support from a special educator to include students with learning disabilities, they expect that new strategies and procedures that are student specific are the responsibility of the special education teacher (O'Connor et al., 1992). In general, teachers including students with disabilities need to accept responsibility for the individual progress of their students. As general and special education teachers continue to work together, general education teachers should be primarily responsible for choosing, implementing, and evaluating strategies to use with students who are experiencing problems. For example, when general educators who collaborated with a specialist to improve student difficulties correctly identified learning problems and developed their own solutions to implement, they were able to take ownership of the intervention being implemented (O'Connor et al., 1992). As they observed student improvement, teachers continued in and valued their work with the specialist. These teachers were able to develop practices that addressed individual concerns of students while maintaining the needs of the whole group. Once the practicality issue is addressed, however, teachers need to understand how the innovation fits with their personal style and beliefs so that they will sustain its use.

Compatibility between Teacher and Innovation

Teachers implement changes in their practices when they see the application and usefulness of the innovation for their classroom. Often, researchers report that participants change in varying degrees even when participating in equivalent professional development experiences (Briscoe & Peters, 1997; Tillema, 1995; Vaughn et al., 1998; Wilson, 1990). Perhaps the different levels of change are a result of the match between the teacher's instructional style and beliefs and the innovation (Briscoe & Peters, 1997; Courtland & Welsh, 1990; Englert & Tarrant, 1995; Etchberger & Shaw, 1992; Gersten et al., 1995; Kohler, McCullough, & Buchan, 1995; Martens, 1992; O'Connor et al., 1992; Peterson, McCarthey, & Elmore, 1996; Prawat, 1992; Stein & Wang, 1988; Tillema, 1995; Vaughn et al., 1998; Wilson, 1990). Teachers bring diverse backgrounds, expertise, and experiences to staff development projects. They also have different needs and levels of understanding (Tillema, 1995). Because of these differences, teachers need professional development opportunities that provide diverse learning experiences and address beliefs about teaching and learning.

Professional development projects should allow teachers to pursue an area of personal improvement. Englert and Tarrant (1995) described a literacy project over a 3-year period where researchers worked with four special education teachers. Teachers chose to specialize in different areas of literacy based on their interests and teaching histories. All teachers initially chose activities to implement based on what they knew and what they wanted to know. One teacher, Melissa, had previous experience in a whole-language classroom and wanted to learn about strategy instruction. She

focused on developing a strategic approach to literacy instruction. Another teacher, Kate, was interested in learning about teaching writing to her students. She developed an author's center with cross-age groups. These teachers chose areas of personal interest to develop and stayed committed to implementing those changes. Making individual choices about what ideas to incorporate in classroom routines increases the teachers' level of ownership in their professional development.

Addressing beliefs as part of the staff development process is also important to fostering teacher change (Englert & Tarrant, 1995; Richardson, & Anders, 1994; Wood, Cobb, & Yackel, 1991). Beliefs, when not addressed or reconciled as a component in the staff development program, can work against teachers learning an innovation (Lipman, 1997; Martens, 1992; Prawat, 1992; Voltz et al., 1995; Westheimer, 1998; Wilson, 1990). The way teachers implement an innovation is influenced by their framework of understandings, beliefs, and practices. Accurate implementation requires a match between a teacher's framework and the principles underlying the innovation. Teachers are more likely to persist in implementation when such a match occurs (Briscoe & Peters, 1997; Etchberger & Shaw, 1992; Martens, 1992; Prawat, 1992; Wilson, 1990). Based on observations and interviews, Wilson (1990) described the instructional practices of Mark Black, a fifth-grade math teacher, during his first year implementing a new math series adopted by the state of California. No considerations had been made for developing teachers' personal beliefs to ensure for compatibility between beliefs and curriculum rationales. Consequently, the teacher selected and used portions of the text based on his own understanding about how to teach

math. Even though the new curriculum provided rationales for the concepts included in the text, all were subject to interpretation, based on his personal understanding. Consequently, teachers need opportunities to understand rationales behind the innovation and recognize incompatibilities that exist with personal teaching styles and beliefs.

Not only must beliefs be addressed, but also innovations selected for implementation must closely match the teachers' current understandings of instruction. When teachers are presented with new ideas that contradict their personal frameworks, they may discard the new ideas (Pajares, 1992). Teachers need a compatible match between what they understand about teaching and learning and the innovation. One way for outside researchers and staff developers to facilitate this process is by observing in classrooms in order to gain a better understanding of the participant (Vaughn et al., 1998). Observing teachers provides the researchers with information that enables them to fine-tune the product to meet the needs of the teacher better. It is important to create learning opportunities for teachers based on their interests, experiences, and concerns (Englert, Tarrant, & Rozendahl, 1993). Professional development relationships can become stronger when teachers believe the researcher understands their environment, the demands of their job, and provides appropriate experiences for their development (Englert et al., 1993). Researchers should assist teachers in understanding the potential power of the innovation and how it fits in their current classroom routine. This process helps teachers reconcile their personal beliefs and knowledge and best practice.

Need for Concrete Examples

One important way to develop teachers' understanding of an innovation is providing them with concrete examples of how the innovation works. If teachers can visualize how an innovation works in their classroom, then they will be more successful during implementation. Classroom innovations can be difficult to understand when first introduced. Teachers need concrete examples to illustrate how new practices or strategies will work in their personal settings. Teachers use modeling as a form of effective instruction while introducing new concepts to their students and subsequently need it themselves to understand how an innovation will apply in the context of their classroom (Courtland & Welsh, 1990; Etchberger & Shaw, 1992; Gersten & Woodward, 1990; Peterson et al., 1996; Vaughn et al., 1998; Wilson, 1990).

Courtland and Welsh (1990) worked with one teacher, Bob, to implement a process writing approach. In his first year of implementation, Bob used the process writing approach during journal writing activities. He had difficulty understanding how to use the approach across the writing curriculum. As a consequence, he participated in a university course on language and writing and attended conferences and inservice. He sought support from his principal and a language arts instructor at a local university to better understand and implement the process writing approach. The principal and instructor provided the teacher with support by discussing reading materials, observing his class, providing demonstration lessons, and giving him feedback. Through his work with other professionals and their assistance in helping him see the application of concepts through

demonstration lessons, he was able to incorporate changes in writing throughout the curriculum. Generally, teachers benefit from concrete examples to assist them in understanding innovations.

In summary, if innovations are to be used by teachers, they must be appropriate given teachers' individual needs. Innovations have to be practical and relatively easy for teachers to incorporate. Changes that have many components, do not demonstrate student improvement, and do not benefit most of the students will not be sustained. To increase the likelihood of sustaining new practices, teachers' personal frameworks for teaching have to match the rationales behind the innovation. Teachers also require support in understanding how to use practices, strategies, and curriculum through concrete examples. Assisting teachers in understanding the importance of innovations and their applicability to their classrooms will require on-going support through demonstrations and reflection.

Outside Perspective

Teachers benefit from watching demonstrations of how innovations work and need time to reflect individually and as a group with someone from outside the typical school environment (Courtland & Welsh, 1990; Wood et al., 1991). Outside professionals, such as researchers and teacher educators, can bring diverse perspectives to a group (Briscoe & Peters, 1997; Jones, 1997; Richardson & Anders, 1994). District personnel with expertise in given areas have been advocated as a resource to reflect critically with teachers about their practices (Senge, 1990). However, in studies reporting the importance of outsider perspectives, the outsiders are typically researchers, who are more likely to write about their work than district trainers. Diverse

perspectives can challenge traditional practices and assist teachers to reflect critically about their instruction. Outsiders can help teachers to conceptualize the innovation through demonstrations and then provide them with opportunities to reflect on difficulties in implementation and incompatibilities that might occur with their current practices.

The notion of a critical friend has been introduced as a way for individuals, groups, or schools to receive thoughtful feedback and assistance in improving instructional practice (Costa & Kallick, 1993; Muncey & McQuillan, 1993; Senge, 1990). Knowledgeable outsiders who offer expertise in specific areas can assist teachers in learning innovations through demonstrations and then help them reflect on how to use them effectively (Boudah, et al., 1997; da Costa, 1993; Englert & Tarrant, 1995; Englert et al., 1993; Fuchs, et al., 1995; Richardson & Anders, 1994; Vaughn et al., 1998). However, the outside person must be one the teachers trust before they feel comfortable with him/her in their classrooms and listen to his/her feedback (Costa & Kallick, 1993; Richardson & Anders, 1994; Wood et al., 1991). In summary, outsiders provide another viewpoint, one that is removed from the everyday situation of the classroom. When outsiders have gained teachers' trust, they can (a) demonstrate new innovations and (b) promote reflection in participants. Demonstrating for teachers the implementation of new practices and providing them with feedback provides teachers with a different perspective than what they are typically afforded through personal reflection (Hargreaves, 1994a).

Demonstration

Teachers benefit from having someone in their classroom to assist them in applying a strategy or practice (Courtland & Welsh, 1990; Englert & Tarrant, 1995; Vaughn et al., 1998). Teachers have commented about the importance of having another set of hands in the classroom to assist them in correctly incorporating the new practice and to get assistance in solving problems as they arise (Englert et al., 1993; Richardson & Anders, 1994; Wood et al., 1991). In a project where special education researchers worked with general education teachers to learn four inclusion strategies, teachers indicated that one of the perceived benefits of the project was to have the research partner provide demonstration lessons in their classroom (Vaughn et al., 1998). One of the teachers indicated that teachers are often afraid to try new things because of the fear of failure. Having the researcher demonstrate the strategy in the classroom and having an opportunity to implement it while being observed assisted teachers in becoming competent. Through the demonstration process, teachers were able to receive assurance from the outsider about adapting strategies to best meet the needs of their individual classrooms. Overall, teachers benefit from another perspective as they attempt to implement new practices.

Reflection

Teachers need opportunities to reflect on their practices with researchers and other members in the collaborative group (Lipman, 1997). One way for teachers to understand the need for change is having them review videotapes of their instruction (Richardson & Anders, 1994; Wood et al., 1991). Some researchers videotaped or audiotaped teachers during

instruction and then reflected on those lessons with the teachers (Boudah et al., 1997; da Costa & Riordan, 1996; Richardson & Anders, 1994; Wood et al., 1991). Not all teachers are comfortable being taped (da Costa & Riordan, 1996; Marks & Gersten, 1998); therefore, reviewing observation notes and student data with teachers may be more appropriate. Promoting reflection through collaborative discussions benefits teachers by (a) making connections between their personal beliefs and the rationales behind innovations, (b) providing student data on the effects of their work, and (c) considering diverse perspectives through other members' viewpoints.

To create opportunities for reflection, researchers must work in classrooms and provide feedback to teachers (Boudah et al., 1997; da Costa & Riordan, 1996; Englert & Tarrant, 1995; Fuchs et al., 1995; Gersten et al., 1995; Hunsaker & Johnston, 1992; Marks & Gersten, 1998; O'Connor et al., 1992; Oja, Kull, & Kelley, 1995; Richardson & Anders, 1994; Vaughn et al., 1998; Wood et al., 1991). When debriefing about an observation, researchers and teachers can critique practices in light of the rationale behind the new innovation or what they know is best practice. Researchers can question teachers about the thinking and reasoning behind their actions to help them articulate personal beliefs (Richardson & Anders, 1994; Wood et al., 1991). Discussion among teachers and researchers allows members to reconcile practices and rationales. Wood et al. (1991), for example, described a case study of a second-grade teacher changing her pedagogical approach to mathematics. The teacher met weekly with researchers to discuss her videotaped math lessons. As the teacher engaged in conversations with researchers, she found that the mathematics information provided by the

researchers was in conflict with her current teaching practices. The teacher spent time discussing those dilemmas with researchers. Researchers provided the teacher with possible suggestions for change until the teacher was able to resolve the conflict. The authors concluded that learning occurred as a result of conflict followed by reflection and then resolution. They believe that times of conflict enable teachers to seek resolutions and then choose their own resolutions to increase the likelihood that changes will be sustained (Wood et al., 1991).

Researchers can also promote reflection by providing assessment data on student progress and helping teachers reflect on the lesson itself. To illustrate, in a literacy project, Englert et al. (1993) provided teachers with assessment data on students to show them the effects of an instructional innovation. In doing so, they modeled for the teachers how to evaluate the effectiveness of their instruction through assessment. When researchers show the effects of instructional changes by using student assessment data, it can be a powerful reinforcement for teachers to continue innovation use (Englert et al., 1993; Fuchs et al., 1995). As teachers begin to understand the effectiveness of their work, they will value the professional development process and continue to refine their practices.

Being exposed to diverse perspectives is important in collaborative work. Lipman (1997) described a collaboration where an outsider was absent and teachers had similar mindsets. They made no progress toward fundamental change. This collaboration involved two teams of middle school teachers who worked together to decrease racial disparity in student achievement. Teachers decided to restructure to reduce tracking. All but one

of the teachers in this group was White. The author found that discussions often focused on individual students who were African-American, and teachers reassured themselves that their own practices were not at fault. Teachers traded stories about individual students and their deficiencies and family pathologies, areas of students' lives over which they had little control. Conversations about racial disparity were purposely avoided. These findings suggest that beliefs have to be examined as a part of reform or only surface level change occurs. Teachers need assistance from others outside of the school context in examining their beliefs about students who are different from them or they will not change their practices in fundamental ways.

Outside educators provide opportunities for teachers to understand research-based teaching techniques and address their beliefs when they are in contradiction with new ideas (Costa & Kallick, 1993; Jones, 1997). As researchers work with teachers in assessing the effects of their instruction, teachers begin to understand the importance of refining their practices. Outside educators, especially researchers and teacher educators, can offer a different perspective because of their knowledge of the literature and discussions with professionals in the field (Courtland & Welsh, 1990). In addition, they bring an outsider perspective that can shed new light on teachers' taken-for-granted beliefs and practices. Teachers need to learn about innovations that are appropriate for their individual needs and beliefs. Teacher educators and researchers can assist them in effectively incorporating changes by providing them demonstration lessons and assisting them in reflecting on their change efforts. Once teachers are provided with realistic innovations, demonstrations, and opportunities to reflect on these

changes, they need support in their development process through collaboration with other teachers and researchers.

Professional Collaboration

Many researchers have agreed that changes resulting from professional development were sustained or dissipated depending on the follow-up, or collaboration, that occurred (Cox, 1983; Fullan, 1982; Miles & Huberman, 1984; Showers, 1990). Collaboration provides teachers opportunities to work continuously through their understanding and beliefs regarding a new innovation in a sustained context. All but five studies (Etchberger & Shaw, 1992; Martens, 1992; Prawat, 1992; Tillema, 1995; Wilson, 1990) in this review described collaborative efforts among teachers, and in some cases, university researchers. Collaboration in these studies involved teacher groups, teacher-researcher groups, dyads, peer coaching, or consultation between teachers and specialists. The majority of studies involved a small subset of teachers from the same school or different schools that met together in an on-going effort to explore or learn an innovation; however, some studies examined middle and high school teachers involved in school-wide collaboration.

Collaboration facilitates learning because it provides teachers with a structure for sharing their knowledge and beliefs, support for changing their practices, and opportunities to develop their thinking about teaching and learning (Pugach & Warger, 1996). Providing teachers time to discuss what they know about teaching and learning allows them to consider their beliefs and practices in a context with other diverse perspectives. Over time, teachers develop relationships that allow them to trust and support each

other during times of change (Louis, Marks, & Kruse, 1996; Talbert, 1993). Teachers also experience greater confidence in solving problems of practice and in their ability to find solutions to problems (da Costa, 1993; da Costa & Riordan, 1996; Englert & Tarrant, 1995; Oja et al., 1995; Pugach & Johnson, 1995; Stein & Wang, 1988; Warren & Payne, 1997). As their perspective about teaching and learning evolves, they view themselves as able to implement innovations and are more likely to be successful in doing so than peers who lack confidence (Stein & Wang, 1988). Confidence in one's ability leads to having confidence in the group and the ability of members to assist each other in making changes (Oja et al., 1995; Rosenholtz, 1989). As teachers develop a collective efficacy, they view themselves as empowered to engage in more leadership roles and develop a sense of control over student outcomes. Shared leadership becomes an outcome when participants are expected to be contributors (Englert et al., 1993; Jones, 1997; Rosenholtz, 1989; Shafer, 1995). In the beginning, researchers often fill the role of leader, and as teachers become more confident in the collaborative process, roles shift to teachers leading the group and sharing their areas of expertise (Englert et al., 1993; Jones, 1997). Elements of collaboration that are critical for promoting teacher change are (a) opportunities for critical discourse and (b) supportive school context.

Critical Discourse

On-going collaboration provides opportunities for teachers to discuss their current framework about content and curriculum and its match with the rationales behind the innovation (Englert & Tarrant, 1995).

Opportunities for academic discourse with other participants assists teachers

in resolving conflicts between their framework for teaching and rationales for innovation (Hunsaker & Johnston, 1992). Discourse deepens teachers' conceptual understandings, and as a result, their framework for teaching begins to change (Boudah et al., 1997). Then teachers are able to engage in new practices that derive from their evolving understanding (Englert & Tarrant, 1995; Peterson et al., 1996; Richardson & Anders, 1994). Through their consideration of other views and experimenting with supporting practices, teachers develop deeper knowledge of teaching and learning (Voltz et al., 1995). As teachers share knowledge and learn new practices through collaboration, they are also able to develop a common vision for students and teaching (Englert & Tarrant, 1995).

Develop conceptual understanding. Collaboration provides teachers with opportunities to talk with other professionals about pedagogical knowledge (da Costa & Riordan, 1996; Englert & Tarrant, 1995; Jones, 1997; Martin, 1995; Meichtry, 1990; Prawat, 1992; Torres, 1996; Westheimer, 1998). These discussions help teachers formulate new ideas and develop understandings that contribute to the commonalities of group knowledge (Donahue, Van Tassell, & Patterson, 1996; Englert & Tarrant, 1995; Lasiter, 1996; Nias, Southworth, & Yeomans, 1989). As teachers create shared meanings about learning and children, they are able to develop new practices to meet the need of students better (Rosenholtz, 1989). For example, da Costa and Riordan (1996) studied the engagement of dyads of teachers in collaborative conversations about classroom problems. These dyads involved the pairing of general education teachers with other classroom teachers, speech teachers, or administrators. Dyads met together to assist the general

education classroom teacher in solving problems of practice they encountered in their classrooms. Teachers who were successful in developing strong professional relationships with the dyad partner often engaged in discussions of pedagogy during and outside of meetings. As the general educators' understandings developed, they were able to change their orientations about student learning and change their practices to meet the diverse needs of students.

As teachers change how they think about teaching subject matter or student learning, their practices will reflect those changes (Pajares, 1992; Richardson, 1996). In studies of collaboration involving teachers and researchers as well as general and special educators, teachers changed their practices in two important ways. First, teachers were able to change how they viewed subject matter as a result of participation in collaboration. Teachers changed their views of and practices in literacy (Englert & Tarrant, 1995) and writing (Peterson et al., 1996) as a result of collaborative learning groups. For instance, Peterson et al., (1996) described how teachers were able to improve how they teach writing as a result of having access to well-articulated ideas within their school. Teachers met regularly to discuss the importance of writing within the curriculum and shared their practices of how to improve student learning. Second, teachers also moved away from being teacher-directed and text-driven to student-centered and constructivist in their view of instruction (Boudah et al., 1997; Etchberger & Shaw, 1992; Hunsaker & Johnston, 1992; McIntyre & Kyle, 1995; Richardson & Anders, 1994; Torres, 1996; Wood et al., 1991; Woolsey, 1991).

To illustrate, Boudah et al. (1997) described the changes Becky, a sixth-grade teacher, made as a result of participation in a group project to learn how to implement a comprehension strategy with students. Becky was described as a traditional teacher as evidenced by her planning and teaching. She emphasized teaching content and assessing the whole group, with little attention to individual or subgroups of students. In the second year of the study, she participated with other teachers and researchers in study group meetings. These meetings focused on improving and implementing the comprehension strategy. Additionally, she was asked to target one or two students with learning disabilities when making instructional and planning decisions. Through these collaborative interactions, Becky began to plan and gear instruction to the individual needs of her students. She was able to add modeling to instruction and continued working on building prior knowledge for all students. Researchers concluded that her greatest change occurred as she was able to move from being content-centered to student-centered. As teachers are able to develop their orientations about teaching and student learning, they begin to implement practices to reflect those views.

Developing conceptual understanding contributes to better knowledge of resources teachers can draw upon when thinking about instruction. These resources involve outsiders, other colleagues, literature, or ideas teachers learn about through learning together. Collaboration is an effective tool for professionals to share what they know, learn from others' knowledge, and learn about a new innovation. With the diversity of knowledge presented and represented within a group, teachers add to their existing knowledge by developing their teaching repertoire (Gersten et al., 1995; Pugach & Johnson,

1995). In other cases, teachers were able to deepen their knowledge of content and instructional strategies (Englert & Tarrant, 1995; McIntyre & Kyle, 1995; Meichtry, 1990; Peterson et al., 1996; Torres, 1996; Vaughn et al., 1998; Voltz et al., 1995). In two studies, teachers working together to design new curricula had opportunities to share their knowledge and expertise (Martin, 1995; Meichtry, 1990) and, consequently, were able to improve their understanding of that curriculum. Martin (1995) explored three sixth-grade teachers' team approach to designing new curriculum for their students. This team viewed their work as successful as a result of sharing their personal knowledge of curriculum, each considering themselves an expert in a given area, and then creating a joint construction of their knowledge to develop new curriculum. The group regarded their diversity in knowledge as a key factor to their effectiveness. It is the diversity of knowledge that allows teachers to learn about new instructional strategies and student groupings when collaborating (Englert & Tarrant, 1995; Peterson et al., 1996). In sum, opportunities to talk about subject matter or strategies assist teachers in deepening their knowledge of resources. Through collective conversations about a central topic, participants have the opportunity to develop a common vision.

Common vision. Schools with a coherent sense of both vision and goals are better equipped to meet those goals (Rosenholtz, 1989; Wasley, Hampel, & Clark, 1997). Working together regularly helps teachers develop shared understandings and beliefs about students and learning (Donahue et al., 1996; Englert & Tarrant, 1995; Englert et al., 1993; Lasiter, 1996; McIntyre & Kyle, 1995; Meichtry, 1990; Nias et al., 1989; Warren & Payne, 1997).

Teachers are provided opportunities to discuss progress students make academically, problems a student may be encountering, or available resources to assist the teacher or student (Meichtry, 1990). As teachers share their stories and assist one another in solving problems, they develop a collective responsibility for students and learning. Additionally, collaboration can assist teachers in articulating personal beliefs about students, learning, or subject matter and then help them develop beliefs that are shared by the group (Donahue et al., 1996; Englert & Tarrant, 1995; Tillema, 1995; Wood et al., 1991). Shared beliefs allow the group to work toward a common focus and support one another through the change process. Because of the common beliefs and commitment to the group, they are able to work through conflicts. When controversial issues arise, the community works as a group to resolve issues and views the resolution process as part of their work (Wasley et al., 1997; Westheimer, 1998). The opportunity to share beliefs can contribute to the success of the implementation of an innovative practice or collaborative structure.

Westheimer (1998) examined the goals and beliefs from two middle schools committed to fostering professional communities. He studied the school's functioning as a whole and then teams of teachers responsible for the same group of students. The author concluded that beliefs played an important role in determining the success of a school-wide restructuring effort. Teachers were committed as a collective group to formulate curriculum and school events that fulfilled the school vision. To conclude, a common vision, which promotes clarity and focus for beliefs and values, is essential to create any type of deep and sustained change.

School Context that Promotes Change

Another important element of collaboration is the school context. School context is critical for providing teachers a climate of support for learning together where they are able to take risks and implement changes in their practices (DuFour, 1997; Fullan, 1991; Nias, Southworth & Campbell, 1992). Collaboration provides the context for teachers to discuss their failures and successes and receive support in their everyday environment to continue learning new practices (Englert et al., 1993; Hunsaker & Johnston, 1992; Wood et al., 1991). Variables that are important for establishing a collaborative school context are (a) facilitative leadership, (b) a trusting, supportive community, (c) commitment to learning, and (d) a supportive infrastructure.

Facilitative leadership. Researchers agree that administrators play a key role in creating instructional improvement in schools (Fullan, 1999; Westheimer, 1998). They provide leadership to the group by communicating a clear, meaningful vision for teaching and learning (Westheimer, 1998). Good principals share leadership roles and allow teachers to have a stake in developing and interpreting the school vision (Peterson et al., 1996; Westheimer, 1998). Additionally, they support teachers in their endeavors to learn and develop professionally (DuFour, 1997). Principals committed to teacher development through collaboration build vision, create an expectation for learning, foster collaboration, and share power.

The administrator provides opportunities to discuss the vision of the school and philosophies underlying that vision. With school personnel, the effective administrator helps to establish a common vision that promotes

clarity and focus for beliefs and values (Westheimer, 1998). Teachers use that vision to guide, refine, and develop their practices (Peterson et al., 1996). In some cases, principals recruit and hire teachers who will support the school vision and have common beliefs about collaboration, participation, and joint work (Peterson et al., 1996; Westheimer, 1998). Administrators set the example to influence change.

Effectual principals play a critical role in creating an attitude and expectation for learning within the school environment (DuFour, 1997; Hargreaves, 1994a; Peterson et al., 1996). They are seen as contributing members in school study groups and not as supervisors of teachers' participation (Jones, 1997). Teachers need to have access to well-articulated ideas that assist them in developing their own ideas (Peterson et al., 1996). A savvy principal looks outside the school to bring in outside resources to assist teachers in their improvement of practice. These outsiders provide regular critical feedback to administrators, teachers, and staff on their efforts to improve student learning (Wasley et al., 1997).

Good administrators foster collegial environments by socialization of individuals who hold common views about purpose and principles of good practice (Peterson et al., 1996; Westheimer, 1998). One of the ways that principals create a collaborative context is by developing structures in the environment that promote face-to-face interactions among school personnel (Carter, 1995; Martin, 1995; Meichtry, 1990; Rosenholtz, 1989; Westheimer, 1998). School-wide events where teamwork is emphasized have been used as vehicles to create interaction among school personnel (Nias et al., 1989; Talbert, 1993). Effective administrators also foster positive school climates.

In collaborative cultures, they model characteristics that support positive collaboration through their openness, tolerance, and flexibility (Nias et al., 1989). Administrators and teachers provide positive feedback to each other on their efforts and work (Chalfant & Pysh, 1989; Hargreaves, 1994a; Kruger, Struzziero, Watts, & Vacca, 1995; Lasiter, 1996; Louis et al., 1996, Nias et al., 1989).

Good leaders share decision-making power with their staff. Groups of teachers and staff members work together with the principal in creating school-wide projects and jointly assume responsibility for the students, curriculum, and discipline (Carter, 1995; Lipman, 1997; Martin, 1995; Meichtry, 1990; Peterson et al., 1996; Westheimer, 1998). Exemplary administrators also distribute power by allowing teachers the freedom to design curriculum, formulate school policy, and create collaborative partnerships (da Costa & Riordan, 1996; Hargreaves, 1994a; Lasiter, 1996; Nias et al., 1989; Talbert, 1993; Webb & Romberg, 1994). Teachers and staff members are recruited for various leadership roles throughout the school based on the talents they bring (Westheimer, 1998). Diversity among talents and perspectives contributes to the collective good of the school (Martin, 1995; Westheimer, 1998). On the other hand, principals who have difficulty giving up control or who are threatened by teacher decision making will not support collaborative efforts or allow time to meet during the school day (Jones, 1997). Collaborative groups that function effectively have shared leadership among all the participants (Englert & Tarrant, 1995; Shafer, 1995).

Trusting supportive community. Researchers discuss the importance of support and trust to developing and sustaining collaboration. When teachers and researchers work together for an extended period of time, support and trust increase and become a perceived benefit of participation in collaboration (Carter, 1995; da Costa & Riordan, 1996; Jones, 1997; Lipman, 1997; McIntyre & Kyle, 1995; Oja et al., 1995; Torres, 1996). Developing trust takes time (da Costa & Riordan, 1996; Hargreaves, 1994a; Lasiter, 1996; McIntyre & Kyle, 1995). In a reorganization of a K-3 program into a nongraded program, McIntyre and Kyle (1995) described the evolution of teachers as they learned about developmentally appropriate instruction and teamwork. They concluded that the opportunity to converse repeatedly over time with colleagues and teachers led to trusting relationships. When teachers work together frequently, they begin to see colleagues as friends and family and are able to accept differences of opinion and philosophy (Nias et al., 1989).

When teachers encounter instructional and behavioral challenges, those who work in teams and share the same students can offer collegial support through idea sharing (Carter, 1995; Louis et al., 1996; Nias et al., 1989; Talbert, 1993). These teachers can share what has been effective for them and encourage their colleagues to continue in their efforts to find solutions to problems. Teachers need support from colleagues when trying out new instructional procedures and developing knowledge because the change process is uncertain and difficult (Jones, 1997; Oja et al., 1995; Torres, 1996). Teachers need opportunities to experiment with new ideas through the support of other group members engaging in new practices

(Englert & Tarrant, 1995). Torres (1996) described how 25 teachers benefited emotionally from collaboration as a result of their participation in Systematic Inquiry Groups. Teachers experienced affective support as their ideas and actions were validated and encouraged by group participants. Participants reported that they maintained their commitment to developing new ideas because they knew others were struggling along with them in attempting to implement changes.

Commitment to experimentation. Creating supportive environments where teachers are committed to risk taking allows teachers to make changes (Englert et al., 1993; Hargreaves, 1994a; Lasiter, 1996; Nias et al., 1989; Talbert, 1993). In a supportive environment committed to learning, teachers are likely to try new ideas (Fuchs et al., 1995; Hunsaker & Johnston, 1992; Jones, 1997; Peterson et al., 1996; Shafer, 1995; Torres, 1996; Vaughn et al., 1998). When learning an innovation, and particularly one that may be contrary to their framework for teaching, teachers need opportunities to experiment with the new information. When teachers implement new ideas and observe success or benefits from the innovation, only then will their beliefs change and, consequently, their practices (Guskey, 1985). Experimentation allows teachers to practice and eventually develop new instructional techniques (Hunsaker & Johnston, 1992). For collaboration to be successful, teachers have to be committed to experimenting with new practices and be supported in doing so (Chalfant & Pysh, 1989; da Costa & Riordan, 1996; Lasiter, 1996; Meichtry, 1990; Nias et al., 1989; Saurino, 1996; Talbert, 1993; Webb & Romberg, 1994).

Teachers can create meaningful products as part of their participation in a professional development group by conducting research in their classroom (Oja et al., 1995; Torres, 1996). When teachers design products that are tailored to their individual needs, they allow them to see the effects of their efforts. Oja et al. (1995) described a middle school mathematics and science collaborative where teachers from four middle schools talked with university researchers and consultants from the state department of education. Authors reported that the data collected on results of teachers' research efforts had a positive effect on teacher growth and interest in the research process. They concluded that an important force for effective change was the creation of meaningful products. Teachers' participation in the process and outcomes of the innovation made them want to continue to revise their instruction. Teachers that choose the interventions or practices to implement were more likely to be dedicated to consistent implementation (Englert & Tarrant, 1995; Vaughn et al., 1998). Generally, teachers who are committed to collaborate about an innovation are encouraged by the group to implement new ideas in their classroom (Hunsaker & Johnston, 1992).

Collaborative infrastructures. Principals can create opportunities for teacher development by creating time for them to meet and promoting collaborative interactions. Teachers need time to work on group projects (Peterson et al., 1996; Westheimer, 1998), discuss student progress (Meichtry, 1990; Mitchell, 1994; Westheimer, 1998), develop shared knowledge (Englert & Tarrant, 1995), plan together (Webb & Romberg, 1994), and reflect on practices (Boudah et al., 1997; Pugach & Johnson, 1988; Webb & Romberg, 1994; Wood et al., 1991). Most effective professional

development programs are conducted during the school day and not as an add-on responsibility (Jones, 1997). Time is essential for teachers to engage in activities that allow them to become agents of change where they openly discuss their failures and successes (Oja et al., 1995).

Principals create structures that allow groups of teachers the opportunities to work together throughout the school day. Opportunities to collaborate should not be limited to grade level colleagues but should extend to other school staff and outsiders (da Costa & Riordan, 1996; Jones, 1997; Peterson et al., 1996; Westheimer, 1998). Teachers who work in community pods with other teachers who share the same academic responsibilities for students receive encouragement and support from one another when making decisions about curriculum, schedules, and grades (Carter, 1995; Meichtry, 1990; Warren & Payne, 1997). Teachers report that common planning allowed for greater reflection about their teaching (Carter, 1995; Meichtry, 1990), better integration of material across content areas (Meichtry, 1990; Warren & Payne, 1997), and more refined understanding of student needs (Carter, 1995; Gersten et al., 1995; Warren & Payne, 1997). By working in a group context, teachers come to understand that they have greater ability to help students and coordinate appropriate learning experiences for them (Carter, 1995; Gersten et al., 1995; O'Connor et al., 1992; Warren & Payne, 1997).

To illustrate, Carter (1995) described a case study of two teams of four teachers each at a high school where teachers and students were grouped in a community pod. Teachers felt they could exert more authority in making school decisions and felt they had the ability to make changes in the

curriculum, schedules, and grades. Teachers indicated that they felt more control over the educational outcomes of their students. In general, participants who are allowed to share in the creation and development of new ideas can gain a sense of shared leadership and sense of control in student outcomes.

In summary, collaboration provides teachers a forum to discuss their knowledge about instruction and subject matter so that pedagogical shifts can occur. Developing thinking about pedagogy increases the likelihood that a teacher will be successful in making shifts about teaching content matter (Guskey, 1985; Nespor & Barylske, 1991; Richardson, 1994). As the group develops, they are better able to critique their practices in light of their collective vision for student learning. A supportive school context provides school personnel with opportunities to meet together to develop themselves professionally and collectively. Even when a highly collaborative environment exists and teachers are assisted in learning appropriate innovations based on personal interest, change is not guaranteed. A teacher's level of readiness for change also influences the degree of changes that they will make.

Teacher Readiness for Change

For teachers to engage in effective practices, they need opportunities to develop them (DuFour, 1997; Joyce & Showers, 1988). Vaughn et al. (1998) discussed the idea of selecting teachers to participate in professional development programs based on interest and commitment to changing their practices. However, they concluded that even when participation is voluntary and teachers indicate they are interested in the topic, some teachers still do not make changes. Teachers' level of readiness for change can facilitate or

hinder their learning of new practices. Qualities of readiness that are important for teacher development are teachers' (a) ability to reflect, (b) knowledge and beliefs, and (c) commitment to change.

Ability to Reflect

Personal reflection allows teachers to critique their practices and make changes as needed (Carter, 1995; Jones, 1997; Martin, 1995; Meichtry, 1990; Peterson et al., 1996; Richardson & Anders, 1994; Wood et al., 1991). As teachers reflect about developing their practices, they need to know how to access new ideas and assistance (Englert & Tarrant, 1995; Hunsaker & Johnston, 1992). Reflecting on personal frameworks for teaching and how those match with newly learned practices is important for sustaining change (Martin, 1995). In contrast, teachers' lack of reflection can inhibit their ability to make enduring changes (Hunsaker & Johnston, 1992; Martens, 1992).

Martens (1992) studied a science teacher who was learning to use a problem-solving approach. The teacher made some alterations in teaching strategies and materials, but no change occurred in her view of her role as the teacher. She learned about new curricular practices but did not understand the rationale behind the innovation. She never did effectively teach students to solve their own problems. Martens concluded that the teacher was not reflective and was not able to resolve her beliefs about teaching and learning as they related to the new problem solving emphasis of the curriculum. Not being able to reflect on the larger principles and rationales undergirding a new curriculum can inhibit a teacher from making

substantial changes in practices. Instead, teachers make surface changes to give the appearance of change but actually change very little (Fullan, 1991).

Knowledge and Beliefs

Developing knowledge and beliefs is essential to the successful use of new practices (Briscoe & Peters, 1997). Teachers' level of knowledge directly affects the types of practices they use. Teachers who have limited understanding of content rely heavily on the text and teach based on their personal experiences with subject matter (Briscoe & Peters, 1997; Courtland & Welsh, 1990; Etchberger & Shaw, 1992). As teachers come to understand subject matter better, they are then able to refine their practices to enhance student learning (Briscoe & Peters, 1997; Prawat, 1992; Richardson & Anders, 1994).

Beliefs about students and how they learn influence how teachers approach learning tasks (Richardson & Anders, 1994; Wilson, 1990; Wood et al., 1991; Woolsey, 1991). Teachers have different beliefs about instruction and, therefore, integrate changes that are compatible with their own perspectives (Briscoe & Peters, 1997; Englert & Tarrant, 1995; Etchberger & Shaw, 1992; Martin, 1995). If teachers are unable to find compatibility between innovation rationales and their framework, they will make surface level changes or no changes at all (Briscoe & Peters, 1997; Englert & Tarrant, 1995; Martens, 1992; Peterson et al., 1996). Even when teachers want to make changes and they collaborate with a successful teacher, some still find it difficult to change their teaching approach (Briscoe & Peters, 1997). In contrast, teachers who typically have successful teaching records may not see the need for participating in innovative projects; subsequently, their beliefs

and practices remain the same (Martens, 1992). Therefore, when teachers see no need to change, they will not incorporate new practices (Briscoe & Peters, 1997; Courtland & Welsh, 1990; Englert & Tarrant, 1995; Etchberger & Shaw, 1992; Martens, 1992; Martin, 1995). Thus, what teachers understand and believe about instruction influences what they learn and the degree to which they learn it.

Commitment to Learning

Commitment to learning is another essential aspect of teacher readiness for change. Teachers who are committed to learning persist through conflicts until they find resolution, are open-minded to new ideas, and are able to self-assess and determine areas they need to change. These teachers have a mindset for improvement and work toward changing their practices to best meet the needs of their students (Boudah et al., 1997; Peterson et al., 1995). Change is often a difficult process filled with uncertainty (Vaughn et al., 1998). Teachers committed to learning are able to withstand times of ambiguity and persist in change (Boudah et al., 1997; Oja et al., 1995; Peterson et al., 1995; Vaughn et al., 1998; Wood et al., 1991).

As noted earlier, knowledge and beliefs play an important role in developing new practices. Teachers who are committed to learning are able to suspend immediate judgment about an innovation until they have had time and opportunity to reflect and develop its use (Briscoe & Peters, 1997). Being open-minded to change allows teachers to deepen their knowledge and develop their beliefs about teaching and learning. A commitment to learning seems tied to one's ability to critically reflect on one's teaching abilities. Ability to self-assess helps teachers determine the areas where they want to

develop. Teachers who have a good understanding of what they know and what they need to know participate in professional development that is meaningful to them (Courtland & Welsh, 1990; Englert & Tarrant, 1995). As teachers choose their own areas to develop, they see the need to conduct on-going research and continue fine tuning their practices (Englert & Tarrant, 1995; Oja et al., 1995; Torres, 1996). On the other hand, teachers who participate in professional development for the purpose of receiving inservice points or because they feel pressure from school personnel or district mandates may lack commitment to the development process (Englert & Tarrant, 1995; Tillema, 1995; Vaughn et al. 1998). These teachers inhibit personal learning from taking place and may hinder a group's development (Englert & Tarrant, 1995; Tillema, 1995). Even when teachers are told that participation in professional development projects is voluntary, many still perceive pressure to participate (Englert & Tarrant, 1995; Vaughn et al., 1998). Commitment to learning and willingness to endure the ambiguous nature of change is essential for teacher change.

Summary

Professional development is essential for teachers learning new ideas and altering their practices to meet the diverse needs of the students in their classroom. To allow teachers opportunities to learn new practices, they must be presented with innovations that are concrete, practical, and understandable. Ideas that are easily understood have a better chance of being incorporated into teachers' instructional routines. Providing teachers on-going support through collaboration during the learning process assists teachers in developing their understanding and beliefs about new concepts.

Through their learning with colleagues and outsiders, they develop a common vision for teaching and learning and experience an increase in self-efficacy and collective efficacy. Supportive structures promote common vision and allow teachers to develop practices that match that vision. By providing support through innovative structures and time, principals create opportunities for the school community to work together to solve problems of practice. Participants begin to experience trust and support as they realize others are engaged in the uncertainty of change. Teachers' individual level of sophistication influences the types of changes and development that will occur. Being reflective, committed, and having well developed knowledge and beliefs assist teachers in learning and incorporating changes in their teaching.

Considerations for General Education Teachers Working with Diverse Learners

General education teachers face a great challenge in meeting all the needs of such a diverse student population. Because so many factors influence change, the degree of change is hard to predict (Fullan, 1993). Determining the needs of participants and providing them with meaningful experiences can be quite challenging, especially when they are learning about an innovation that is quite different from their experiences. For example, assisting general educators to meet the needs of students with disabilities can be difficult. According to Schumm and Vaughn (1998), general education teachers face many challenges when attempting to meet the needs of students with disabilities. These challenges include (a) a history of providing whole-class, undifferentiated instruction that includes minimal adaptations

for students with mild disabilities (Baker & Zigmond, 1995); (b) the perception of adaptations as being desirable for student learning but not feasible to implement; (c) minimal time for general and special education teachers to collaborate; (d) access to few resources to make adaptations; and (e) desire for instructional practices that assist students with disabilities, while meeting learning needs of all their students.

If students with disabilities are to be educated effectively in general education, then great effort is necessary to change traditional instructional practices (Vaughn et al., 1998). Researchers and special educators have recently looked to find ways of assisting general education teachers in learning strategies to use with students with disabilities (Marks & Gersten, 1998). Yet, little is known about how to best meet teachers' needs. Few studies have focused on general education teachers learning new practices to better include children with learning problems (Boudah et al., 1997; Fuchs et al., 1995; Gersten et al., 1995; Marks & Gersten, 1998; O'Connor et al., 1992; Pugach & Johnson, 1995; Vaughn et al., 1998). In order to understand the complexity of working with general education teachers to assist them in learning inclusive practices, these studies have indicated that two important issues must be resolved.

Issues to Resolve

The problems reported by researchers when working with general education teachers related to one or more of the four critical components of professional development. Even when programs were well developed with many or all of the components, some teachers experienced difficulty in either

learning or sustaining the innovations because of (a) diverse perspectives and (b) too little time for reflection.

Special Education Versus General Education Perspective

Special education and general education operate under two different perspectives about teaching. General education teachers concern themselves with teaching content and covering specific concepts in a given amount of time and, therefore, have a group orientation towards teaching (Pugach & Warger, 1996; Schumm & Vaughn, 1995). They understand general curriculum and the skills students should master by a given grade level (Pugach & Warger, 1996). Special education teachers have specific knowledge in learning strategies, modifying instruction, and adapting materials and textbooks (Gable, Hendrickson, & Lyon, 1987; Pugach & Warger, 1996). They have individual students in mind and think about how to change what exists to better meet student needs.

General educators seek interventions or strategies that would be helpful to a larger population, not just a few isolated students (Gersten et al., 1995; O'Connor et al., 1992; Vaughn et al., 1998). When teachers learned interventions that targeted a few students and were very systematic, they did not incorporate them as often (Gersten et al., 1995) and sometimes expected the special education teacher working in the classroom to be responsible for executing them (O'Connor et al., 1992). General education teachers' concern with all students helps to explain their hesitation in changing their practices to accommodate a few students, especially when those practices are complicated, cumbersome, rigid, and student specific. Often when special education researchers have worked with general education teachers, they

taught them interventions that differed from their general educators' perceptions of improving student learning (Fuchs et al., 1995; O'Connor et al., 1992; Vaughn et al., 1998). These programs had multiple steps and often required a great amount of extra teacher time and effort (Fuchs et al., 1995). Even when researchers made efforts to demonstrate, assist, and provide feedback during implementation, teachers abandoned the strategies once the project ended (Fuchs et al., 1995; Vaughn et al., 1998). When given multiple strategies to learn about and use, teachers continue to use the easiest ones and abandon the more complex ones regardless of their power in improving student learning (Fuchs et al., 1995; Marks & Gersten, 1998; Vaughn et al., 1998). Also, scripted problem-solving programs, often seen in special education innovations, limit participants' ability to personalize innovations (Pugach & Johnson, 1995). These programs do not allow for extending and adapting structures to create a compatible fit with individual needs. A balance must be found in providing teachers with supportive structures without inducing rigidity. Teachers need to see the benefits of an innovation to their personal context before they will commit to incorporating it into their teaching routines.

Extensive Time for Reflection

Making inclusion work takes fundamental changes in how we think about classrooms and the instructional methodologies we use (McLeskey & Pugach, 1995). Teachers need time to support the philosophy and practice of inclusion (Fullan, 1991; McLeskey & Pugach, 1995; Sarason, 1990). When general and special education personnel work together, they may not share common understanding and beliefs about children with learning problems

(Gersten et al., 1995; Marks & Gersten, 1998; O'Connor et al., 1992; Pugach & Johnson, 1995). To help general education teachers understand the importance and practicality of new interventions, they need multiple opportunities to practice, reflect, and resolve any conflicts they might have with the innovation (Wood et al., 1991). Teachers need assistance in understanding the larger picture of how the innovation is important to current routines and not just another isolated, add-on responsibility (Marks & Gersten, 1998; O'Connor et al., 1992; Vaughn et al., 1998). Teachers need time to discuss their views of teaching and learning and concerns they have about the usefulness of an innovation. Teachers who do not receive feedback on the progress of incorporating new ideas and are not given the opportunity to develop compatible beliefs will abandon the use of the innovation (O'Connor et al., 1992).

In sum, professional development that facilitates teacher's learning about an innovation can be a powerful tool for influencing teachers' practices. Specific components have been effective for creating this type of change. First, teachers need to learn about innovations that are practical, compatible, and understandable. Innovations need to be appropriate for individual needs, compatible with teachers' personal beliefs about teaching, and understandable through a provision of concrete examples. Second, teachers need to work with outside researchers and teacher educators who can assist them in developing their use of innovations through providing demonstration lessons and helping them to reflect about their progress. Third, continuous support through collaboration is important for teachers to continue in their experimentation with new practices. Group members engage in critical

discourse that allows for developing and refining their beliefs and practices. Collaborative structures also provide teachers with the expectation and support for improving their work. And fourth, teachers' level of readiness for change is an important factor for determining their development of new practices. In order to facilitate their personal development, teachers need to reflect, have knowledge and beliefs that will assist them in understanding the innovation, and exhibit a personal commitment to change. When considering all these factors affecting teachers' professional development, it is understandable why many programs prove to be ineffective with some or all of their participants. Making lasting changes in teachers' framework for teaching and learning is a difficult task that takes exceptional planning and possibly, a little luck.

It is the intention of my study described in Chapter 3 to add to the teacher change literature. My study is unique; it focuses on general education teachers who participate in a collaborative professional development program to learn new practices to better include students with behavioral and learning problems. Teachers have access to an outsider who helps them in their personal development of inclusive practices. This study includes to the greatest extent possible the four essential factors of professional development programs. No study has addressed all these components in school/university collaboration with general and special education teachers. Additionally, I make efforts to address the problematic issues that may arise when working with general education teachers who are attempting to learn more inclusive practices. Hopefully, the results of this study will provide a better understanding of how special education researchers can work with general

education teachers to help them include students with behavior and learning problems.

CHAPTER 3 METHODOLOGY

Rarely are teachers afforded opportunities to work in the context of a group with colleagues and teacher educators; thus, little research exists to document school/university collaboration with general and special education teachers. Collaboration and university/school partnerships often are described as effective practices to assist teachers in addressing problems in their classrooms (Joyce & Showers, 1988; McLaughlin, 1991; Sparks & Loucks-Horsley, 1990). Yet, little is known about how these collaborations assist teachers in changing their practices. In a collaborative effort between teacher educators and general and special elementary education teachers from an urban school district, we established a Teacher Learning Cohort (TLC) to assist teachers in addressing problems of practice. The TLC was established to assist teachers in learning how better to include students with challenging behaviors and academic problems.

The purpose of this study was to describe general education teachers' use of practices, the extent their practices support the inclusion of challenging students, and how those practices changed through their participation in a TLC. The TLC allowed teachers to meet with colleagues from their school and teacher educators to discuss problems of instructing students who are hard to teach and manage and then work toward solving those problems. The teachers worked not only in a collaborative group but also individually with one university researcher who acted as a reflective friend. I, the reflective friend, worked with four general education teachers

for 2-1/2 years to assist them in learning instructional innovations. In addition to describing the changes teachers made in their practices, other aspects of the change process were studied, including (a) the role of the collaborative group, (b) the role of the reflective friend, and (c) the role of teachers' context.

To change teachers' instructional practices, they have to be provided with new information, observed implementing it (or not implementing it), and questioned and observed over time during the process (Richardson et al., 1991; Wood et al., 1991). Through the TLC, teachers met monthly with participating colleagues and university researchers. Teachers discussed problems they encountered in their classrooms and, as a group, discussed possible solutions. Teachers created a plan to address their concerns and in later meetings shared the progress of their actions with the group. To fulfill the observation and feedback component, I, as the reflective friend, spent 2 to 4 hours a week in each teacher's classroom. Through observing individual teachers, I was able to understand the types of problems they encountered as well as the specific context in which they worked. Through interviews and conversations, teachers expressed not only their concerns but also personal perspectives about teaching, students, and learning. Considering what I learned about individual teachers, I was able to provide them with innovations that I believed had a high probability of being implemented in their classrooms.

To describe how teachers changed, I participated and observed in classrooms, interviewed teachers, conducted informal meetings with individual teachers, participated in and documented collaborative group meetings, and collected other evidence that demonstrated the implementation of new practices. I spent time managing and working in the

collaborative group. I recorded what teachers said and how they talked with colleagues about students and the new practices they were implementing. In essence, I became a part of the school culture. Because of the nature of the research question and type of contact with the participants, I determined that qualitative case methodology was the most appropriate approach for this study.

Collaborative Group Work

The purpose of the following sections is to describe the data collection and data analysis procedures for this study. These sections include descriptions of the broader context of the study, methods for gaining access into the school and individual classrooms, participants and their classrooms, the evolving role of the TLC, and the role of the researcher/reflective friend. In the final section, research procedures and methodological issues are reviewed.

Broader Context

As part of an effort to begin a collaborative project with teachers in an urban school district in Florida, the Dean of the College of Education at the University of Florida (UF) provided travel funds in the spring of 1997 for three faculty members and a graduate assistant from the Department of Special Education. The intention of this seed money was to help secure external funding for a large-scale project in this district. The project proposed to develop collaborative groups in urban schools to promote sustained collaboration among teachers with the intention of improving the inclusion of students with learning and behavioral problems. The following year a small grant was awarded through UF to provide funds for me to continue my work in the selected school. In the third year, the Office of Special Education

Projects awarded three faculty members external funds to work in one additional school.

The focus of the larger project was to determine the effectiveness of the TLCs through studying (a) the creation of TLCs and how they facilitate inclusion of students with learning problems, how these teachers develop inclusive beliefs and effective practices that contribute to the learning of all students, and how the groups contribute to the development of a collaborative culture in the school; (b) how participation affects the inclusion of students in individual classrooms and referrals to special education; (c) the conditions and processes that make collaboration viable; (d) how participation in the group affects teacher attrition rates; and (e) how the group helps teachers to improve students' academic performance.

My study was different in that I focused specifically on four teachers and how they developed new practices by being a part of the TLC and having access to a reflective friend. This study was about individual change and development within the context of a collaborative group and interaction with an outsider. I also considered other conditions within and outside of the work context that influence how teachers change.

I conducted this study at Hidden View Elementary, a school that had been associated with the TLC project since 1997. Hidden View serves approximately 570 pre-K through fifth-grade students and employs 27 full-time classroom teachers. There is one classroom for pre-K, three classrooms each for kindergarten, first, second, and fifth grades, and four classrooms for third and fourth grades. Third- and fourth-grade classes have a lower number of students to allow teachers to prepare students for standardized testing. In addition, there is a special projects classroom for previously retained students and four classrooms that serve students with moderate mental retardation.

The student population is diverse in terms of ethnic background and socioeconomic status: 56.8% are Caucasian, 36.7% are African-American, and 6.5% are members of other minority groups. Nearly 42% of students receive free lunch, and an additional 10% receive fee-reduced lunch. The school district has designated Hidden View as a Regular Education Initiative (REI) school where students identified with learning disabilities and emotional handicaps are served full-time in the general education classrooms. A full-time special education teacher serves in a consultant role. As part of her responsibilities, she spends 1 hour each day in five teachers' classrooms assisting students with disabilities. These five teachers, one at each grade level from first through fifth grades, are designated as the REI teachers. REI teachers generally have reduced class sizes and are assigned anywhere from one to five students with disabilities. Students with more severe learning disabilities and mild mental retardation are served at other schools.

The principal assigned teachers to REI classes. She chose teachers who were supportive of inclusive practices and able to work with the special education consultant. The principal, Mrs. Summerlin, has been at Hidden View Elementary for almost 10 years. Half the teachers at the school were there before she came. Mrs. Summerlin really wanted the TLC project in her school because this was her first year implementing the REI model and she wanted the expertise of special education researchers to foster collaboration and leadership among her teachers. She asked specific questions about the data collection. She was informed that the information we collected was confidential, and we could not discuss any information about the teacher participants with her. We have communicated with her about the workshops and meeting purposes, and she created time to meet and provided substitutes for the teachers.

Gaining Access

As a part of the TLC project, teachers were aware that we would be collecting data on “the influences of the collaborative process in order to better understand how to assist teachers in developing strategies to assist students who experience learning and behavioral problems” (see Appendix B, Letter of Informed Consent). They were informed that they would participate in interviews and meetings and that someone would observe in their classroom periodically. All participants were fully aware of the data collection process and the purpose of our research. Official approval by the University’s Institutional Review Board (IRB) of Human Subjects was granted to observe, interview, record meetings and conversations, and collect artifacts on teachers. My study was a small component of the larger project covered by the IRB approval.

We described the general intent of the study at the initial meeting, and I repeated this description for newcomers in the following years. The goals of the research were presented in general terms to avoid influencing the outcomes of the study. We also explained our work to the teachers in a letter (see Appendix B). The amount of time spent in these classrooms over the past 2-1/2 years minimized the possibility that the initial discussion would have an impact on the study’s findings. The teachers were reminded over the years that observations and data collected were not for administrative evaluation. They were reminded that the school and district administration, nonparticipants, and any other district personnel would not have access to the data and that their names would never be associated with the data. To provide participants anonymity, I used pseudonyms to refer to all teachers, school staff, and the school itself.

Participants

The four teachers who participated in the TLC project for all 3 years were the focus of my study. This study took place from the onset of the project in February 1997 until June 1999. The four teachers taught different grade levels and varied in teaching experience and ethnic background. The principal spoke highly of these teachers and considered them to be strong professionals.

Kay is a kindergarten teacher who instructs approximately 28-33 students each year. She is an African-American woman in her early 40s with 14 years of teaching experience. Her educational background is in early childhood and elementary education. In 1998, she completed a master's degree in educational leadership. She is also trained as an English for Speakers of Other Languages (ESOL) teacher. Her classroom instruction can be described as direct, whole group instruction using a center format with an emphasis on providing individual assistance to every student. She uses positive reinforcement and classroom routines to manage student behavior. Although no students at the kindergarten level are identified as special education students, students who exhibit challenging problems are a part of the class. At the end of each school year, Kay considers making a few recommendations for students to be tested if she believes they have a significant learning or behavior problems.

Diane is a second-grade teacher whose class ranges from 25-28 students each year. She is a Caucasian woman in her mid 40s with 24 years of teaching experience. She is certified as an elementary, kindergarten, and ESOL teacher. She was the REI teacher for the second grade during the 1998-1999 school year and taught reading to the students in the REI classroom during the 1997-1998 school year. Diane typically uses cooperative

learning, center work, projects, and teacher-led instruction as part of her teaching routines. She uses positive reinforcement to manage student behavior and teaches her students socially appropriate behavior using a life skills approach.

Martha is a third-grade teacher with a typical class size of 18-25 students. She is an African-American woman in her mid 30s with 11 years of teaching experience. She is certified in elementary education and early childhood education with a master's degree in elementary education. She is currently working on ESOL certification. She was the REI teacher for the third grade in 1996-1997 and 1997-1998. Also, she taught math to the students in the REI class during 1998-1999. Martha relies on textbook instruction and individually monitors students' progress on seatwork assignments. She uses verbal reprimands, detention, and parent conferences to manage student behavior.

Cindy is a fourth-grade teacher with a typical class size of 20-24 students in her homeroom class and 24-28 students in her other three sections of reading. She is the fourth-grade reading teacher with the other three teachers covering science/social studies, math, and language arts. She is a Caucasian woman in her mid 40s with 19 years of teaching experience. She is certified as an elementary, early childhood, and ESOL teacher. She was the fourth-grade REI teacher for 3 years from 1996-1999. Initially, Cindy used teacher-directed instruction and independent seatwork as part of her teaching routine. She implemented verbal reprimands and detention and occasionally used tangible reinforcers to praise correct behavior or academic achievement.

Evolving Role of the TLC

Mrs. Summerlin encouraged REI teachers and the special education teacher to be a part of the TLC, but all participation was voluntary. From our initial meeting in February until June of 1997, nine teachers (four REI teachers, the special education consultant, the special projects teacher, and three general education teachers) participated in the TLC project. We met with teachers bimonthly in half-day and whole-day sessions and talked about their concerns and how to address them (see Table 3.1). Initially, we used a problem-solving format where one teacher described a problem and the group generated solutions. The teacher then selected a strategy and made a plan to address the problem. We provided them with information on new strategies (e.g., cooperative learning, behavior management, and phonological awareness) that would help to solve some of the classroom issues that they encountered. We observed them only once or twice that first year. We also interviewed teachers at the end of the first year (see Appendix C). As a result of our observations and discussions at group meetings, we found that

Table 3.1

Summary of Data Collection Procedures

Year 1 Procedures	Hours
Classroom observations and informal follow-up conversations	4
Formal interviews	2
Full Day TLC Meetings/Workshops	28
TLC Meetings (Hour long)	0
Total Data Collection	34

teachers implemented few changes. We refocused our work the next year to address this problem.

During this second year, I conducted weekly observations, monthly meetings, and periodic workshops (see Table 3.2). Specifically, I planned and scheduled the collaborative meetings, worked with individual teachers to discuss problems of practice and to learn and implement new innovations, co-planned and conducted four workshops to teach all members about an innovation, and assisted teachers in reflecting on and evaluating their progress. Additionally, all teachers were interviewed in the middle of the second year (see Appendix C). Five of the original teachers continued with the project. Three dropouts said they did not have time to commit to the project, and one left the school for health reasons. We also had a first year teacher join our group, bringing our total to six.

Table 3.2

Summary of Data Collection Procedures

Year 2 Procedures	Hours
Classroom observations and informal follow-up conversations	221
Formal interviews	2
Full Day TLC Meetings/Workshops	28
TLC Meetings (2-Hour long)	20
Total Data Collection	271

I increased my observations in the second year as a way to learn more about the teachers' challenges, classroom practices, and understandings about teaching and learning. I hoped that I could then provide them with

suggestions that were more consistent with their beliefs. I gave teachers specific feedback on concerns they had about a lesson or student and talked to them about problems they encountered and the purpose behind some of their actions. At first they were uncomfortable with being observed and notes being taken during observations. Because of their discomfort, I decided to begin by assisting them in monitoring student progress and providing help to students rather than taking notes. In a sense, I acted as another teacher or aide in the classroom. As I developed a good working relationship, the teachers told me how much they appreciated the help, and I began to understand their classroom practices and beliefs better. My questions and assistance became tailored to their actual needs. The teachers eventually said any of us were welcome in their classroom, planned or unannounced.

In addition to the observations and feedback sessions, teachers created a plan for targeting an area of concern. Previously, teachers had talked about making changes, often very abstractly, and rarely followed through with action. We created action plans so teachers could choose a personal goal, develop an action to take, determine ways to assess their progress, and establish a time frame for completing their goal (see Appendix F). We asked teachers to think of one instructional and one behavioral improvement they wanted to make that they had control of changing. As the reflective friend, I assisted teachers in choosing reasonable goals, provided ideas (e.g., instructional strategies and management plans) to assist them in accomplishing goals, and helped them develop reasonable assessment measures and establish a timeline. Teachers who were committed to creating action plans participated in the TLC.

During the third year, the research team, now expanded to include another UF faculty member from the School of Teaching and Learning,

received federal funding to include additional schools in the TLC project. A new school was added in the 1998-1999 school year. At Hidden View the UF researcher from the School of Teaching and Learning assisted me in conducting observations, interviews, meetings, and workshops. Although all six year 2 teachers continued in year 3 of the project, the special education consultant left the school in December. Five general education teachers joined the TLC, of whom four were new to the project. All the REI teachers, except the fifth-grade teacher, participated in the TLC.

Because of the large number of TLC participants, we split into two groups. One group was for kindergarten through third-grade teachers and the other group was the entire fourth-grade team. My colleague and I observed once every other week and conducted two separate TLC meetings a month (see Table 3.3). We conducted two interviews this year, one in the fall and the other in the spring (see Appendix C). In addition, each TLC group met for a full day workshop with the other TLC groups from the new school. Selected teachers from each group presented innovations they used in their classrooms.

Table 3.3

Summary of Data Collection Procedures

Year 3 Procedures	Hours
Classroom observations and informal follow-up interviews/conversations	102
Formal interviews	4
Full Day TLC Meetings/Workshops	30
TLC Meetings (Hour long)	20
Total Data Collection	156

Role of the Researcher/Reflective Friend

As the primary researcher, I worked as a graduate assistant on the TLC project from October 1996 to June 1999. The first year I worked with two UF researchers as we began our TLC work. During years 2 and 3, I was the UF contact person and ran the project at Hidden View Elementary. Together with UF faculty, I co-planned workshops that helped teachers acquire knowledge and demonstrated innovations that were compatible with their current practices. In my role as reflective friend, I spent additional time discussing the benefits and circumstances in which strategies would be implemented and observed and provided feedback during implementation. On many occasions during year 2, I not only provided feedback but also assisted individual teachers with implementing new instructional strategies. The teachers talked openly to TLC participants and nonparticipants alike about the positive effects the strategies had in their classrooms. Because of the participants' enthusiasm for the TLC project, the school principal had me talk to three reporters and the state-level school accreditation committee about our work there (see Appendix F). As a result of developing a positive relationship with these teachers and their principal, it made it easier to gather "trustworthy data" (Bogden & Biklen, 1982). Often, I was told I was one of them, and teachers talked candidly with me about themselves and their perceptions of their work environment.

Research Procedures

Qualitative methodology (e.g., participant observation, interviews) was used in collecting data to develop my understanding of various factors that facilitated or inhibited teachers' acquisition of inclusive strategies. According to Sherman and Webb (1988), "qualitative inquiry is an appraisal or judgment; its function is to interpret, or appraise, behavior in relation to

contextual circumstances" (p.10). Studying the change process of how teachers adopted inclusive practices while participating in a collaborative group was a descriptive task. Teacher collaboration is influenced by contextual conditions that are not unique to the TLC. These contextual conditions include personal beliefs about teaching and learning, interactions with a reflective friend and other colleagues, individuals' classrooms, and the school. Thus, I employed case study methodology (Yin, 1994).

Research Design

The case study design that was most appropriate for studying teacher change was the single-case, embedded design (Yin, 1994). A single-case approach can be employed to document or analyze an extreme or unique case. It was rare to have teachers collaborating with other teachers and university researchers where one of the researchers acted as a reflective friend. Thus, this case was distinct in three ways. First, teacher collaboration groups rarely exist in schools (Hargreaves, 1994a); second, university faculty seldom participate in the collaborative group; and third, few such collaborations have focused on the inclusion of high-risk learners. The main focus of the study was the individual teacher's development of inclusive practices. Each of the four teachers studied represented a subunit of analysis, and all were considered embedded units of analysis within the larger design (Yin, 1994). Therefore, this study was identified as a single-case, embedded design. This design can be particularly helpful as the "subunits can add significant opportunities for extensive analysis, enhancing the researcher's insights into the single case" (Yin, 1994, p. 44). By studying four teachers, patterns emerged that provided insight into the change process as teachers acquired new practices. The individual units, teachers in this case, added substantially to the findings by illustrating common themes for describing the process of

change. By having multiple units for analysis, I determined if patterns fit with general change across all participants or were unique to individual teachers.

Multiple sources of evidence were gathered in my study to increase the quality and the substantiality of the findings. Yin (1994) stressed the importance of multiple sources of evidence so that data would converge in a triangulating fashion. As the data from different sources supported the same conclusion, the validity of the findings was strengthened. To gather multiple sources of evidence, I refer to four types of evidence cited by Yin (1994). The forms of evidence are (a) participant observation, (b) interviews, (c) direct observations, (d) and documentation. The following paragraphs describe the data collection process and each source of evidence that were used in this study.

Data Collection

Each teacher was observed twice a month for 2 school years, 1997-1999. Observations lasted anywhere from 2 to 4 hours. Some observations had specific purposes, and others were informal. The teacher's needs and level of comfort with me being in her classroom influenced the type of observation. I conducted debriefing sessions with the teacher after these observations (see Appendix D). The four teachers also participated in four formal, hour-long interviews that were recorded using a laptop computer. Teachers participated in a monthly group meeting throughout the project. These meetings were full-day workshops, half-day workshops/meetings, or hour-long meetings. The needs of the group determined the focus of the meeting. I recorded TLC meeting minutes through the use of a laptop computer. These minutes captured the events that occurred and many comments and contributions of the teachers. Additionally, after these

meetings and for many of the other days spent at the school, I made reflective notes that represented my impressions, concerns, and other interesting events that occurred. I spent approximately 461 hours in total data collection. A summary of the time spent in total data collection is presented in Table 3.4.

Table 3.4

Summary of Data Collection Procedures

Total for Study	Hours
Classroom observations and informal follow-up conversations	327
Formal interviews	8
Full Day TLC Meetings/Workshops	86
TLC Meetings	40
Total Data Collection	461

Participant observation. A major part of data collection involved participant observation wherein I assumed a variety of roles. I participated in most teacher observations through team teaching, assisting students, and providing other types of help to the teacher. After observations, I met with teachers to discuss my observation and their reflections (see Appendix D). I also was an active participant in workshops and group meetings, after which I recorded reflective notes. These notes were recorded using a laptop computer as were my reflections of events from the day and impressions I had as a result of conversations or observations. In some cases, my recollection of conversations with teachers have been recorded (e.g., laptop computer) as evidence of teacher change. Observations and reflective notes informed me about classroom practices and provided me with information

about the changes being implemented. Notes from observations and reflections provided additional information about teachers' beliefs and practices. Observations were used to verify that teachers were, in fact, making the types of changes they claimed to be making in their interviews and conversations.

Interviews. Interviews are considered one of the most important sources of information in data collection (Spradley, 1980). They allow others into the personal world of the interviewee. My interviews were semi-structured conversations with participants that allowed them to talk about their problems of practice, the roles of the TLC in helping them learn new strategies, and how their environments affect their work. Additionally, teachers discussed their knowledge about teaching, their beliefs about students and learning, and their perceived sources of help. Interviews were piloted with teachers not participating in this project. All interviews were focused and open-ended, and teachers were asked for direct responses and opinions about their teaching, students, and work environment. Four interviews were conducted by researchers on the project and myself with each participant (see Table 3.5). In the first three interviews, we asked teachers about the problems of practice related to including high-risk students, their typical ways of addressing those problems, and current sources of support. To determine if teachers talked differently over time as a result of their increased involvement in the TLC, these interviews were similar for all 3 years. In the fourth interview, we asked respondents about the TLC group and changes they incorporated in their classrooms (see Appendix C for interview protocols).

Direct observations. Direct observations involve documenting an occurrence, such as a math lesson, for a specified period of time. Particularly, these observations focused on the implementation of a new strategy,

Table 3.5

Summary of Interviews

Interviews	Date
Protocol 1—Year 1	June 1997
Protocol 2—Year 2	January 1998
Protocol 3—Year 3	November 1998
Protocol 4—Year 3	May 1999

classroom management techniques, or student engagement. Three types of direct observations were used for data collection. First, focused observations were recorded through notes by the researcher in the form of an anecdotal record, which later were typed using a laptop computer. These observations were conducted at the request of the teacher and used to record the number of verbal reprimands or positive statements made in a given amount of time or the amount of seatwork given during an observational period. Because only one teacher requested focused observations, this type of information played a secondary role. Second, formal observations were conducted one time during year 3 as part of the data collection procedures for the larger study. In these observations fellow researchers and I used Pathwise™, a teacher performance assessment, to document practices in four domains (Appendix E). The first domain focused on organizing content knowledge for student learning and required an interview between observer and teacher.

Domains B and C, creating an environment for student learning and teaching for student learning, were observed during the actual lesson. The last domain, teacher professionalism, involved the teacher reflecting on the lesson. Data were obtained through a postobservation reflection. Third, semi-formal observations were conducted twice in year 3 using criteria from domain B (creating an environment for student learning) and C (teaching for student learning). Observational notes were made under each of the five criteria for domains B and C. The Pathwise™ observation and semi-formal observations were primary data sources for evidence on instructional practices (Appendix E).

Documentation. Documents included action plans, letters, agendas, meeting minutes, administrative documents, teacher generated items, and newspaper clippings. Documents were used to corroborate evidence from other sources. In this study, action plans were one of the main sources of evidence, and teacher work, letters, and school information added to the main data sources. Teacher action plans were documents that we asked teachers to complete. These plans indicated how they would implement strategies to solve a problem of practice in their classroom. This document created accountability for their actions by having teachers list how they would document the effectiveness of their strategy and provide a reasonable timeline for meeting their goals. Action plans were collected once or twice a year for the second and third years (see Appendix F for action plans).

Additionally, meeting minutes were maintained at each small and large group meeting. Meeting minutes provided essential information about teachers' comments and participation, including information about teacher's intentions and beliefs about new practices and the inclusion of high-risk

students. I took careful notes of the conversations members had with each other and documented the contributions they made.

Other sources of documentation for this study included letters written to the teachers and principal regarding project information, agendas for the collaborative meetings and workshops, meeting minutes taken for the teachers' review, testing information and scores, and newspaper clippings regarding the TLC project (see Appendix F for copies of action plans and newspaper clipping).

Data Analysis

The main purpose of this study was to describe how teachers who participate in school/university collaboration changed their practices to include high-risk learners. This purpose was best fulfilled with qualitative methodology. In qualitative research, data analysis occurs throughout the study and allows the researcher to fine tune questions and procedures (Miles & Huberman, 1984; Patton, 1990; Spradley, 1980; Yin, 1994). Thus, during the first year of the study, data collection involved one or two observations of each teacher, minutes from four group meetings, and one interview. As a result of year 1 data, I made changes in year 2 to spend more time with teachers in individual meetings, group meetings and workshops, and classroom observations. Over time, questions became more specific as they related to individual participants, their specific classrooms and students, and their teaching practices. I again made changes in my role as a participant in the third year as a result of the teachers becoming more involved in their personal development.

I reviewed and coded the data (Miles & Huberman, 1984) and then looked for a pattern of relationships through a set of conceptually specified analytic categories (Mishler, 1990). As part of this categorization, there were

regularities (patterns) to be found. These categories across participants were views of instruction and management, role of the reflective friend, role of the TLC, and role of teaching context. As categories start to produce similarities, they can be subsumed into a broader category for analysis (Merriam, 1998). Views of instruction and views of management revealed similar patterns (practices, challenges encountered, accommodations, and changes). Both categories were subsumed under the broader category of teachers' framework. This research orientation is appropriate when the context under study is unfamiliar and complex as in the instance of a single-case design where the intention of the study is to describe or explore (Miles & Huberman, 1984). An analytic induction approach allows for patterns to emerge through the data-collection process. The overall purpose of the study was to describe general education teachers' use of inclusive practices and how those practices evolved or did not evolve through their participation in a collaborative group with university researchers. In addition, I examined the role of the reflective friend, collaborative group, and the teaching context in the change process.

I then used the evidence in the categories to construct patterns and themes that described how teachers changed their practices and the roles of internal and external influences. Examples of patterns for role of reflective friend included gaining confidence and trust, teaching partner and coach, research interpreter, and promoting teacher reflection. I used observations, meeting minutes, conversations, and the reflective notes as forms of evidence and then organized and coded them into informative categories that provided concrete descriptions of individuals and their changing practices. These categories were used to construct profiles in which I looked for patterns within the descriptions and created new patterns and categories that

provided general descriptions of how teachers changed their practices to better include high-risk learners.

By focusing on TLC participants for 3 years, commonalities in the data began to emerge. I continued to review notes and interviews (Patton, 1990) and coded some of the data (Miles & Huberman, 1984) from the onset of the study to look for patterns and distinct categories. These categories helped to fine tune interview questions and narrow observations to collect more specific data (Patton, 1990; Spradley, 1980). The categories of the role of the collaborative group, the role of the reflective friend, and the teaching context turned into specific questions to help guide data collection and analysis.

The next step in data analysis consisted of looking for patterns and themes across teachers (Patton, 1980). Subunit analysis required in-depth descriptions of individual teachers and classrooms. Then, I used the themes that emerged to develop a framework for understanding how teachers changed their practices. As the themes became clearer, I was able to compare them with findings in the literature regarding teacher change.

Methodological Issues

Yin (1994) discussed the criteria for judging the quality of research designs based on the four tests that are common to social sciences: construct validity, internal validity, external validity, and reliability. Two issues of validity are particularly pertinent to a descriptive case study and, therefore, will be described in further detail. They are construct validity and external validity. A discussion of the issues of reliability, investigator bias, and ethical issues conclude this section.

Construct Validity

Qualitative research often requires subjective judgments during data collection. To be considered valid, such judgments must meet two criteria.

First, the researcher has to select the types of phenomena that are studied. In this study, the focus of interest will be changes in teachers' practices. Second, the researcher must select measures that reflect the phenomena being studied. I used observations, interviews, meeting minutes, and observer notes that focused on individual teachers within their classrooms, TLC meetings, and the school. These various sources will help create a profile of teachers and their practices. They provide descriptive information on individual teacher development.

Construct validity can be established more carefully by using multiple sources of data, establishing a chain of evidence, using peer debriefing, and conducting member checks against the drafts of data reporting (Yin, 1994). I used multiple sources of evidence specifically to document the new practices teachers learned, how they implemented them, and their sustained use of these practices. Additional evidence documented the role of the TLC and the reflective friend and the teaching context that affects teacher change. Multiple sources of evidence included interviews, TLC meeting minutes, classroom observations, action plans, and researcher reflections. The design and implementation of this study provided a chain of evidence (Yin, 1994) from the research questions, to the methodology, to data collection, and to data analysis and conclusions. Portions of the data were analyzed by other researchers on the project to support, clarify, or revise categories and emerging themes (Lincoln & Guba, 1985). Participants in the study also were asked to review portions of the data (i.e., personal interviews, meeting minutes, and observational notes) to verify or correct the data (Lincoln & Guba, 1985).

External Validity

External validity deals with the issue of a study's findings being generalizable to the greater population. Case studies rely heavily on analytical generalization where the researcher is working toward generalization of results to a broader theory. In this sense, the investigator's goal was to "expand and generalize theories" (Yin, 1994, p.10) based on existing literature. For this study, I used the teacher change literature. For readers to compare a study's context to their situation, the researcher has an obligation to provide a detailed description throughout the study (Merriam, 1998). To enhance the potential for generalization, Merriam (1998) suggested that the researcher provide a rich, thick description so readers can determine how closely matched their settings are to the one being studied and, furthermore, determine if findings can be transferred. Another suggestion by Merriam is to describe the typicality of the individual compared to other teachers so that readers can make comparisons to their own situations. Through multiple forms of data collection and rich descriptions of participants, readers will be able to determine if findings from this study can be applied to their personal situation.

Reliability

Reliability in case study research is achieved when another researcher conducts the same procedures in replicating the case study and arrives at the same conclusions. Addressing the problem of reliability of implementation will lead the researcher to using well-documented research procedures that would assist other researchers in developing a clear picture of the design when attempting to replicate this study. Interview protocols, observation instruments, and meeting agendas are some examples of instruments that would assist another researcher in replicating the case study. Additionally,

key informants and other researchers working on this project can help me stay honest through discussions and by reviewing data and reading portions of the data and drafts of the results.

Investigator Bias

Researchers are prone to bias when they use a case study to substantiate a preconceived notion (Yin, 1994). To protect against such bias, researchers are urged to be clear and forward in describing their perspectives of the phenomena being studied. For me, I have developed friendships and collegial relationships with the TLC teachers. I have had dinner with some of them, walked with one of them, created learning centers until early evening hours with another, had lunch with many of them, team taught with a few of them, and even supervised their classes on occasion. On two occasions, I helped one participant by substitute teaching. Also, I have strong beliefs about the inclusion of students with learning and behavior problems. From the beginning, I have been an advocate for students who have been difficult for the teachers. Issues of friendship and my beliefs about inclusion have played a part in this study. I have worked against bias by being open to contrary findings and have had two or three colleagues question preliminary analyses and findings throughout the study. I discussed my initial findings and emerging patterns with three other researchers involved with the TLC and have consulted other researchers who engage in qualitative research. Questioning along the way has assisted me in fine tuning interview questions, prompted discussions with participants, and resulted in a more careful analysis of data.

Ethical Issues

Ethical principles adopted by the American Anthropological Association served as the guide to assist me in remaining ethical throughout

the study (Spradley, 1980). Teachers had the right at any time to make statements and not have them recorded. Information was not recorded if I was asked not to do so. Informants' rights, interests, and sensitivities were safeguarded throughout the process. Teachers were never coerced to undertake a strategy they felt uncomfortable implementing, nor were they pressured to implement strategies at all. At times, teachers were uncomfortable with me taking notes in the classroom. Notes were made after the observation until the teacher became more comfortable with the procedure. On occasion, teachers asked me not to observe during a scheduled visit. I always made sure the teacher welcomed the visit or observation before it occurred. Over time, many of the teachers welcomed me without an invitation. Throughout the years of the project, teachers were informed of the research objectives and knew that their involvement in the TLC was the focus of the study. The participants have been assigned pseudonyms and in no manner have their names been associated with the data. Participants signed a consent form stating they would receive no financial compensation for participation. They do, however, receive new teaching and management practices, materials relating to their personal interest, and professional services from another educator. I have tested students for teachers, brought them articles that described new strategies they were interested in, and assisted them with learning materials for their students. Finally, all written reports will be made available for teachers to read.

CHAPTER 4 SCHOOL CONTEXT, CLASSROOM CONTEXT, AND TEACHERS' COGNITIVE CONTEXT

I conducted this study to answer the following research question: Can general education teachers collaborating with university researchers change their practices to include students with academic and behavior problems? I also posed related research questions. These questions include the following: What roles do (a) the teachers' context, (b) the TLC, and (c) the reflective friend play in stimulating teachers' change in inclusive practices? In this chapter, I briefly describe two dimensions of context; the school and classroom. I additionally describe the teachers' cognitive context and how the context affected their classroom practices. Evidence collected during the 2-1/2 years of this study suggests that teachers can change their practices in an effort to accommodate students with mild learning and behavioral problems. These changes were in all likelihood affected by teachers' context, the TLC, and the reflective friend.

In Chapter 5, I describe the role of the TLC and reflective friend in stimulating teacher change. I also address issues to be resolved in the TLC reflective friend roles. I then present descriptions of changes in classroom practices.

School Context

Hidden View was built in the late 1950s in a working class neighborhood; the original wing has wood floors, doors, and structures. Most of the teachers at Hidden View had taught there for over 10 years. The school was 1 of 90 elementary schools in a large urban county. Students typically scored at the county average on standardized testing. In spite of being an older school, Hidden View was well kept. The hallways were typically quiet; students' artwork and projects were neatly displayed outside of their classrooms throughout the school.

The findings from the school context and other sections came from interviews, observations, and TLC meetings that involved four teachers: Kay, Diane, Martha, and Cindy. These four teachers were the focus of the study, and it is through their eyes that the school context is described. At Hidden View, administrative style, relationships between teachers, culture of the school, testing practices, and the school's designation as an REI school all help to describe the school context.

Supportive Administrative Style

The teachers described Ms. Summerlin as supportive. She provided instructional materials and opportunities for staff development; as Martha described, "[Ms. Summerlin] is doing a good job of supporting me, [we have] "resources . . . and access to the things that we need to do a better job." Cindy echoed Martha's sentiments.

[She is] supportive of what I am doing in my classroom and provides me with the resources I needed to do my job. Sending me to workshops that I wanted to attend; the materials that I needed to teach reading, like supplemental materials that are not provided by the county.

Anything else, whatever I ask, no complaints. I only ask for what I need. [Principal support] is a worry I just don't have.

Diane also believed that Ms. Summerlin supported their efforts to improve classroom practices. She believed that Ms. Summerlin was interested in effective practices and found ways to bring information about these practices to her teachers.

She is very supportive of things we want to try in our classrooms. I implemented the early reading strategies for children and it was successful. I think it will be implemented in more classrooms because of its success. She saw the success and is doing what is necessary for it to help other children in the school.

Although Ms. Summerlin was interested in improving classroom practice, she did not mandate innovations. Instead, she allowed teachers to vote on whether to implement an innovation school wide. Consequently, her teachers viewed her as a collaborative leader. Cindy remarked, "Ms. Summerlin is a wonderful principal because she understood shared-decision making before it became a concept." Cindy believed that if you worked hard to help students learn, then Ms. Summerlin would give you the power to make decisions about implementing new ideas and curriculum. However, Ms. Summerlin only provided supports within the current structure of the school. More substantial changes had to be approved beforehand.

Congenial But Isolated Faculty

The Hidden View faculty would be best characterized as congenial but isolated. Teachers were cordial to one another and talked with each other about aspects of their personal lives. Often the teachers talked about how well they worked with some or all of their grade level colleagues. However, the teachers rarely talked with colleagues about problems in their classroom

or struggles they had with individual students. Teachers did not seem to know much about how other teachers taught. Although each grade level had its planning periods on the same day (i.e., the entire fourth grade had their "specials" on Monday), rarely did two teachers share more than a 30-minute planning time, and when they did, no co-planning occurred. Teachers often told me that their planning time was important for them to prepare for instruction and complete paperwork. They did not prefer to meet with me or anyone else at that time.

Within grade levels, teachers talked more with their colleagues. The fourth-grade team shared more than other teams and was viewed by Ms. Summerlin as the "most collaborative." The fourth-grade teachers departmentalized by content area (e.g., reading, math) and so taught all fourth-grade students. According to the fourth-grade teachers, departmentalizing helped students because teachers could focus all their efforts on one subject. Often these teachers would discuss students who were having difficulties, but rarely would they co-plan instruction. Instead, they would discuss performances for PTA meetings and culminating projects.

Although Cindy was satisfied with her grade level partnerships, she and other teachers recognized that collaboration was not a prominent feature of the school. Diane, the second-grade teacher, was distressed by the lack of collaboration at Hidden View. She noted that congeniality was not enough for people to develop collaborative relationships and explained that she had no peers with whom she could work closely and share ideas. Diane expressed her desire for greater collaboration when she said,

[I want] partnership and to have something in common with someone else and both work on it and talk out the results. Someone to vent with and then go back and try again. To be around people of like beliefs. If you have a certain mindset and plan together, we can generate multiple ideas and be productive. It helps us to be further along. Everything would be so much better if we could plan and gather things together.

Other teachers were bothered by the isolation at Hidden View.

Teachers did not know what occurred in classrooms other than their own, because they spent little time watching each other. During a discussion of who should be nominated for "Teacher of the Year" from their school, Kay and Cindy both acknowledged they knew little about each other's practices and that such an event was just a popularity contest. My observations led me to believe that Cindy's and Kay's comments were valid. I noted that teachers rarely kept their doors open while teaching. In fact, many non-TLC teachers indicated to their TLC colleagues that they did not want to participate in the TLC project because they did not want outsiders in their classroom.

The culture of isolation was evident in other ways. Teachers in upper grades mistrusted their primary grade colleagues' ability to prepare students for state assessments. Cindy did not support the instructional approach teachers used in primary grades. She often commented about primary teachers' use of "fun little projects" and argued that students needed to spend time working on mastery instead. She speculated that second- and third-grade teachers were the weak links of the school because students' assessment scores dramatically declined from first to second and third grade. She had no knowledge of how students were instructed in any classroom but relied on what her students' younger siblings shared about their projects in her presence and the poor reading performance of 25% of her students. Based

on these observations, she concluded that teachers were not doing what they were supposed to or students would be on grade level when they entered fourth grade. It is interesting that Cindy does not have these same fears about her grade level peers whom she knows better. To the contrary, Cindy believed that her fourth grade peers were quite competent. As Cindy indicated, "My peers have helped me to do things better because I don't have to worry about them." Cindy could concentrate on reading only and knew her colleagues covered the other subject students needed. It was the other teachers in the school she did not trust.

All teachers agreed that time was a barrier to working together as a group and learning more about their colleagues' classrooms. Cindy speculated that if they had time to interact, they would learn more about each other's classrooms. "We have no time to interact. This has been an extremely busy year, and we've had no time to talk about what's going on in our rooms." Teachers had limited time during the day to meet besides the few professional development days that Ms. Summerlin provided to the TLC teachers. Teachers seemed to be isolated due to lack of structures to support interactions among teachers. Therefore, teachers were at best congenial to one another.

Pressure to Meet Performance Standards

Teachers at Hidden View were concerned about improving their students' standardized test scores. The schools' average scores on district and state assessments were published in the city newspaper. Additionally, the state was moving toward a practice of giving schools a grade. At the end of year 3, each school received a grade from A to F based on its performance,

which was published in the newspaper. The teachers as well as the principal felt increased pressure to focus on improving student test scores. Each year in the school improvement plan, the school set goals for improving reading and math scores. The pressure to do so often caused teachers to feel overwhelmed. Diane read the goals of the school and district and described how she felt overwhelmed by students' complex learning problems: "I am overwhelmed by Blueprint 2000.¹ I haven't been able to get a handle on this." In time, she came to realize that not all students would be able to meet the standards, nor could she expect that all students would be able to do the same things.

The district emphasis on test scores. It is a barrier. We are not looking at students as individuals, seeing where they are and seeing what they can do. It is evaluation based on a number, and that is not true evaluation. That is the district attitude that becomes the in-house attitude because it is push, push, push. That makes teachers do crazy things that they would not normally do.

Hidden View's teachers and principal felt pressure to improve their state assessment scores, and pressure dampened their enthusiasm for trying new ideas. Cindy and Martha often talked about how they could not waste instructional time and teach information that was not covered on the test. Diane often did not like to miss days away from their students because she felt it was one less day to prepare for testing. Even when problems of practice were discussed at TLC meetings, these second-grade teachers chose to miss meetings because of pressure to prepare students for state assessments.

¹ National educational goals as described in "Florida's System for High-Quality Schools."

Designation as an REI School

Hidden View was one of the five schools in the county designated as a Regular Education Initiative (REI) school. This meant that all students diagnosed with a learning disability, mild mental retardation, or an emotional handicap would be included full time in general education classes. Ms. Summerlin considered herself a supporter of inclusion and prepared the school for its REI role. She carefully hired a second-year special education consultant to work with the REI teachers. She did not select the teachers for those classrooms but rather recruited volunteers with the promise of smaller class enrollments.

Students with disabilities who fit in with their nondisabled peers and who needed few accommodations stayed in general education classes. When an Exceptional Student Education (ESE) student had persistent difficulty, however, the general education teachers advocated for the child to be in a self-contained classroom. Hidden View also had three classes for students with moderate mental retardation, housed in portables at the back of the school. Except for lunch, these students were not mainstreamed. All students who had mild mental retardation or had a severe learning disability were transferred to another school.

Students in the REI classroom saw the special education consultant for 1 hour a day, generally during language arts. Other than that, ESE students received the same opportunities as their general education peers, with minimal accommodation. The special education teacher generally acted as an aide in each classroom, helping the ESE students complete class assignments

and homework and study for tests. She sometimes advocated for student accommodations.

Despite the existence of an REI model, teachers had little understanding of inclusion and inclusive practices. Essentially, all students were taught the same way. Kay, unlike her peers, did offer individualized assistance to some students who had demonstrated continued failure to learn new concepts during whole group instruction. In some cases, teachers did not know which students had an ESE label, what their disabilities were, or what type of modifications they should make for them. Most teachers believed they could not fail any ESE student for any subject. Many of the teachers gave ESE students a letter grade higher than what they earned. For instance, students who failed reading got Ds.

Summary

In sum, the school context offered some opportunities for change and posed some constraints. The school had a leader who supported teachers' individual change and made some resources available to teachers. The school environment was congenial, and for the most part, teachers were concerned about each other. However, teachers were isolated with no structures for collaboration. Teachers were burdened by district and state level emphasis on increased test scores that often inhibited them from risk taking and trying new practices. Although implementing a form of inclusion (REI classes), the school did not have a vision for inclusion.

Classroom Context

Classroom context influenced teachers' instructional practices to varying degrees, often inhibiting teachers' attempts to accommodate

students. Among these inhibitors were (a) an overwhelming curriculum, (b) common view of curriculum reified by standardized testing, and (c) diversity of learners.

Overwhelming Curriculum

In year 2, Hidden View adopted a new reading curriculum. It differed substantially from the curriculum teachers used in previous years and was difficult to implement in spite of the resources it provided. The curriculum emphasized teaching students to use cognitive strategies in conjunction with specific skills at each grade level. In a given grade level, teachers were expected to teach students 12 different strategies in a year. Teachers had a hard time knowing how to teach the strategies and knowing which ones were the most important to emphasize. Martha was not able to determine what to use and what to exclude. She stated her concerns regarding this challenge:

The new reading series is a challenge. This series is difficult because nothing is in a set order by weeks. It takes us 7-10 days to finish stories and teach all the skills we need to. We have to put things together like puzzles and it is very time consuming.

Like Martha, other teachers had difficulty determining which skills and strategies should be emphasized. The district purchased the curriculum because it emphasized the skills tested on state assessments. So the teachers believed that adhering to the teacher's manual and covering the entire curriculum would help their students' performance. Unlike Martha, Diane was able to pick and choose from the curriculum, particularly as she became more comfortable with it. She found that trying to emphasize all the skills and strategies mentioned in each unit stifled her ability to plan appropriate instructional activities for her students.

Over time, Diane identified helpful curriculum resources. The curriculum offered many resources for teachers in addition to the text and skill book. One of these resources included a remedial reading program for students who experienced problems with grade level materials. Diane was the only one in her school who learned about the remedial program through reading and reviewing her curricular materials. Although she implemented it and shared with colleagues her students' success, none of them made an attempt to learn about or implement it. Teachers did not see how they could implement remedial programs and still expose students to the skills and strategies in the text. Teachers had difficulty understanding how to differentiate instruction while teaching to the whole group. They were overwhelmed by the resources of the reading curriculum and were not trained to implement it in a meaningful way.

Common View of Curriculum Reified through Standardized Testing

The district purchased the new reading curriculum because it covered skills on state assessments. Teachers attended meetings where they learned about the connection between state assessments and the skills emphasized in the curriculum. Throughout the year, teachers also attended workshops that provided them with materials that would help prepare students for the test. As a result, teachers relied on textbooks; they feared that not covering the text would mean not providing their students with the necessary skills and knowledge needed for the FCAT (Florida Comprehensive Assessment Test). Cindy expressed this concern, "With the fourth grade's pressure on testing, scores are reported all over the state. The kids have to be pushed academically. You have to challenge them to meet fifth-grade standards. You

can't spend all of your time reviewing." When the county piloted new assessments in third grade, Martha expressed concerns about preparing her students properly.

Because of the new testing we have this year, I have to spend more time to look at the specifics of what they [students] should know. We have new tests and I need new material. I have to pull together things from scratch to prepare the students for the tests.

Martha was worried that her students would do poorly on the new assessments because she had not been provided with information and resources that prepped students. She had to learn about the assessments and then determine herself what students should know. She then used the curriculum in ways that emphasized tested skills and overlooked the parts that did not.

Fourth-grade students were subjected to the most standardized testing. They took Florida Writes, a writing assessment given to all fourth graders across the state; the FCAT; and the CCT (Comprehensive Competency Test). Because of extensive testing at this grade level, fourth-grade teachers were very concerned about students' academic achievement. Cindy said, "Fourth grade is such a pressure year with reading and writing. I am trying to prepare for tests and cover all the skills." Teachers felt compelled to prepare students for tests and did so throughout the year. Teachers had difficulty making judgments on their own about what was important to teach and how to go about doing it. We often had discussions about covering curriculum as opposed to teaching for mastery. The pressure to improve test scores limited teachers' willingness to depart from the text and implement changes in their practices. For them, the ideas that were

being proposed, such as cooperative learning and learning strategies, often seemed like one more thing to do. Cindy said about teaching, "I don't want to find out at the end of the year that what I am doing is not effective." Teachers wanted guarantees on improved test scores before they would commit to using innovations.

Diversity of Learners

Given the standardized learning context and teachers' traditional instruction, some students failed. Teachers were bothered by student failure, but still their instruction did not change. They made some accommodations for their ESE students but initially believed they could not make accommodations for others. Martha, like other general education teachers, indicated that her greatest challenges were "[students] who learn at different levels and that we have to accommodate. It is a challenge for me to keep a balance between the different learning levels. It is hard to make sure all children are treated fairly." Teachers were especially concerned about how to help students who had difficulty academically but did not qualify for special education services. In year 2, Martha had two students who were not labeled as special education and needed a lot of extra assistance. She was beginning to make minimal accommodations for some students. Martha said ESE students were challenging to her, but other students presented even greater challenges. Once, she described her frustrations as follows: "Angelo who knew almost nothing, and Kevin who can't read . . . I was spending more time with those who were not ESE than those who were." To make matters worse, teachers believed that everyone who was not ESE had to meet the same standards as their typical peers at their grade level. Cindy shared Martha's

concern for significantly low-achieving students. "They come to me so far behind grade level." These students were ones typically not identified as ESE, and they read one to two levels below their typical peers. "It's the basic kids who have fallen behind that make it more difficult to teach."

Difficult ESE students also challenged teachers. Diane had one student in her second-grade classroom who had not mastered the first-grade curriculum. She differentiated instruction for him and provided multiple opportunities to develop his conceptual understanding; nonetheless, the student still struggled.

[I have concerns about] meeting multilevel instructional abilities and a child being in the wrong place. For different abilities, I know what to do. It is just very demanding and hard to get to all you need to do... Roger, he is ESE. Even when I present things, he manipulates objects, and then when I ask him to make the connection with written work he cannot do it. I know that I am asking him to do things that are impossible for him to do. That takes time and takes away from the class.

Diane had difficulty meeting the needs of individual students that required intensive one-on-one instruction when she also had a responsibility to meet the needs of the group. Diane, like the other teachers, wanted to support inclusion, but often they had difficulty knowing how to make it happen. Although challenging students concerned all teachers, really difficult cases made teachers question the appropriateness of inclusion. Even though teachers had good administrative support, they had limited knowledge of accommodations and believed they could not accommodate low achieving general education students.

Summary

The classroom context provided some supports for teachers to engage in new practices. Most teachers had reasonable class sizes, access to instructional opportunities and resources to improve their teaching, and good administrative support. However, mandated curriculum limited change. Teachers were unable to reconcile students' instructional needs with content that needed to be taught for state assessments. As a result, teachers became text dependent and judged all students by the same standards. Additionally, students in the REI classrooms who had serious learning disabilities and those who had complex learning needs and were not in ESE created frustration and challenge to their teachers. Teachers believed that all students had to learn the same thing and this was impossible. Neither the school nor REI teachers shared a vision for inclusion or for effective practices to support inclusion. Teachers were overwhelmed by the complex needs of their students and had limited understanding of their options of how to accommodate those needs.

Teachers' Cognitive Context

How teachers viewed students and learning, their beliefs and philosophies about teaching, and their level of knowledge influenced their readiness for change. In the beginning of the study, three teachers had a standard view of instruction, and one had an individualized view. In the next section, I describe first the standardized instructional framework and then the individualized instructional framework in influencing teacher's readiness change.

Standardized Instructional Framework

Kay, Martha, and Cindy were more standardized in their orientation toward teaching and less inclined to change. Two major themes characterized their teaching: (a) dominance of whole group, undifferentiated instruction and (b) teaching content over mastery.

Whole group, undifferentiated instruction. In the beginning of this study, Kay, Martha, and Cindy could frequently be seen standing in front of their class leading students in a lesson. Typical of upper grades, students reviewed the previous night's homework before learning new concepts. Teachers discussed new terms, made attempts to activate background knowledge, and then guided them to apply the concept followed by students completing assignments independently to demonstrate their understanding.

For example, Cindy explained that she followed a structured format when she presented a lesson. All students were to follow along as she chose individual students to participate. Most often, Cindy would guide students through 45 minutes of instruction and then give them 15 minutes to complete a workbook page. The following excerpt from my field notes illustrates a typical lesson in her classroom but is also illustrative of Kay and Martha's instruction as well.

Cindy is at the podium, discussing vocabulary. They discuss aspects of a map. Students raise hands to answer questions. All students have books open and on their desk. Teacher moves around the room asking questions. They have a discussion about the rainforest. Teacher relates rainforest to what they are doing in science and reminds them to study for the test [science] tomorrow. Brian reads a few sentences. Teacher asks a prediction question. Four students raise hands to respond. Gina reads next. Teacher assists student in self-correcting in reading. Teacher questions about how they feel about the section they just read. I would say that there are about 8-10 students not following along. Chris reads two lines of the next section.

Students were told what they would learn, had limited opportunities to practice, and then engaged in an independent task to demonstrate their understanding.

All three teachers taught to the whole class and had the same expectations for virtually every student. The teachers taught as if their students were a single unit with instructional experiences being the same for everyone. For example, Martha expected everyone to complete tasks in the same manner. She would forcefully show students how to complete assignments if they did not respond appropriately after her verbal feedback.

All the students were given index cards and a marker. Martha then led the kids in making their own flashcards. She wrote $0+0$ on the board in a square on the chalkboard. She tells the kids to write neatly and big, and do not write the answer on the card. After everyone completed the first card, Martha monitored their work and provided feedback. She was very firm and intrusive. She would grab markers and cards out of students' hands and demonstrate for them. I began to tally the comments she was making to the class. For a 20-minute period, Martha made 5 positive comments and 10 corrective comments.

Martha, like other teachers, held standardized expectations for the class. All three teachers wanted students to demonstrate the same skills on the same assignments. Only Kay allowed struggling students to complete easier worksheets that the majority had previously mastered. For all three teachers, students experienced the same form of instruction regardless of their ability or disability.

Content versus mastery. The pressure teachers felt to prepare their students for state assessments compelled teachers to cover the curriculum rather than teach for student mastery. Teachers were also standardized in their view of curriculum. Often they went page by page, chapter by chapter,

when planning for subject matter. When I observed Martha in math, if she assigned students pages 180-181 on Monday, students would be assigned pages 182-183 on Tuesday. Kay was similar in that regard. She taught one letter of the alphabet and one number a week. Kay taught letters and numbers in sequential order.

As I entered the room, all the students were already working at their center groups. One group was working on a coloring sheet where they had to differentiate between 4, 5, and 6. On the back of the worksheet, they had to draw a line from numbers to corresponding pictures. One group was working with bendable materials where they could create objects of their choice. Another group was working with the aide on an art activity. I worked with students on the letter J. They were to color all the J pictures on the sheet and then write a capital and lowercase j under the colored pictures.

One week later, I [assisted students] at the letter K center this time. The students were to color and circle all the pictures that began with the letter K and trace the four sets of K's on the paper. The teacher gave them construction paper in which they were to draw a picture to illustrate an event they remember from the story "Katy No Pockets."

In all three teachers' classes, not all students mastered concepts taught in the curriculum. Regardless of whether a few or many students struggled learning a new concept, teachers continued to move on through the text at a consistent pace. They knew that mastery was important; however, they felt compelled to expose students to all skills in the curriculum before state assessments were administered.

Cindy and Martha made very few accommodations for individual students. In some cases, they reduced the number of problems on homework or tests, had peers assist each other, or recruited volunteer tutors. Martha discussed the sources of support she provided students. "[I can get] Kevin extra help such as tutoring once a week. I have conferences with his mom, getting her involved in what I am doing. Have peers who help him with his

work." Kay felt she could make more accommodations for individual students than Cindy or Martha. In an interview, Kay explained the types of accommodations she made.

Struggling kids are not expected to do the same. [They] trace letters instead of writing them independently, choose two colors instead of coloring all the color words. I am flashing words twice a day and flash numbers three times a day before they go home.

Kay provided some students with worksheets for remediation that the class had previously mastered. She diversified assignments only in this way to provide the support individual students needed to become successful. She provided more of these supports toward the end of the year after she had made decisions to retain these children. Teachers rationalized their limited accommodations for students because they accepted the view that all non-ESE students had to maintain standards for performance at each grade level. Martha talked about the dilemma of being fair, that is, giving and expecting the same for all students. Cindy talked about the same dilemma. "Varying assignments is difficult. I can give students some variety from unit to unit, but varying assignments individually is hard." The struggle to teach content over mastery was a difficult dilemma to solve.

In sum, Kay, Martha, and Cindy were all had a standardized view of instruction. Their practices could be characterized as whole group, undifferentiated instruction with the exception of Kay who made limited accommodations. The class was exposed to the same lesson, and all students were expected to meet the same instructional goals. Teachers moved at a consistent pace through the curriculum, paying attention to covering concepts

rather than teaching for mastery. They found it difficult to make accommodations for students who could not meet grade level expectations.

Individualized Instruction Framework

Unlike the others, Diane often had students working in pairs or groups during instruction. She knew that peer-mediated instruction and cooperative activities helped to support students who were learning at different levels. Diane's instruction was never the same on any given day or week. Diane continually modeled strategies and pointed out other students who were using good strategies. She was always teaching, whether it was an academic, behavioral, or a social skill lesson. Students had choice in many assignments. They worked in groups or independently. She used many teacher-made materials during instruction to enhance student participation. A student-centered approach to instruction, multiple instructional arrangements and strategies, and varied accommodations exemplify Diane's instruction.

Student-centered approach to instruction. Most instructional activities involved developing students' background knowledge and understanding by providing experiences in which they would demonstrate their understanding. Diane often had students participate in activities that developed their understanding of concepts.

I walk into Diane's room and the children are in their same table groups and have connecting cubes in the center of their table. The students are working on pairing. The teacher puts so many blocks in the center of the table and asks students to report the number of blocks at each table. Teacher writes on the board the number of blocks each group has. She looks at the number in the ones column to talk about even and odd. Students practice counting by two and look for patterns. Students then make pairs out of the blocks they have in their groups. One of the groups has one block left over. The groups now tell how many pairs they have and how many blocks left over. The class

has to identify which groups had even numbers and which had odd and explain how they know this to be true.

Diane provided many opportunities for students to share their work with peers. She thought that students often did a better job teaching each other than she could do by modeling and lecturing. To facilitate sharing, Diane would have students, after completing a task, explain the product they made, how they made it, and what they learned. These sessions helped her understand what students knew, and she then further developed their thinking and communication skills. "After center time was finished, the teacher went to each center and asked students from the center to explain how their center worked and share the products they made." In Diane's class, peers have multiple opportunities to be the experts throughout the school day.

Students were constantly involved in authentic learning tasks. When learning about colonial times in the United States, students studied in depth about how people lived in those times. Students went on field trips to reenactments, learned about lifestyles, and then worked on projects to demonstrate their understanding. For instance, they learned how to write using homemade ink and quills and had daylong reenactments of colonial times in their classroom. Students signed up to learn about people and professions (i.e., baker, blacksmith, and stable hand) and created posters explaining their jobs and tools. During the reenactment, they portrayed people of the past and explained to other students and parents about their lives. When students read about China, they prepared a home-cooked Chinese meal where they learned about all the foods and how they were

made. Additionally, they ate the meal sitting on the floor and using chopsticks to keep with customary traditions. Students did not just read stories, complete worksheets, and take tests. They engaged in multiple, stimulating learning experiences.

Instructional arrangements and strategies that promote self-management and positive behavior. In Diane's classroom students participated in cooperative groups, worked with partners, worked in centers, and completed tasks independently. Most often students worked in cooperative groups of three, four, or six students. When students were assigned a task, Diane allowed the groups to determine the roles each member would play. Diane used group rewards to manage student behavior for transitions and during instructional time. Each table group earned points for demonstrating prosocial behavior, for working cooperatively, and for completing tasks correctly. She also frequently prompted students to manage their own behavior. After preparing the groups for an activity, Diane asked, "How will I know if you are working well together?" The students gave various answers. "When we are cooperating, everybody is helping. . ." She also had students tell why groups were successful in cooperating.

Diane believed that by keeping her students engaged in learning she could prevent a lot of problems from occurring.

I keep kids very engaged so I prevent a lot of behavior like aggression and fighting. Off task [behavior] was a problem to a degree. Sometimes getting them going was hard. Self-directed activity times seems to be a problem. So I moved to having the students pick and choose whatever they want and this seemed to help all kids. I reduced choices when some kids had a problem.

Diane allowed her students to make decisions in learning opportunities, whether independently or within groups. When students had difficulty making choices, she reduced the options and had them select from two or three. She realized that students had to be taught how to interact appropriately within groups. She used centers to give them opportunities to work together in playing games or putting together puzzles without working in cooperative groups. I recorded this during an observation, "Diane says her class really needs centers as they help the kids to socialize without all the problems they experience in their cooperative groups." She grouped students in multiple ways to teach them social skills as well as develop their knowledge of academic material.

Varied accommodations. Unlike her other three colleagues, Diane implemented individual and small group accommodations based on students' needs. She knew that reducing the number of problems on assignments was not enough to help students succeed. Often she advocated for students to get remediation in the skills they lacked. She knew the grade level curriculum alone would not provide them with the help they needed. In a conversation with Diane, I noted,

Diane was talking about how we can't teach kids on grade level and just reduce numbers [of problems]. We have to go back and teach the kids the skills they are missing. She said we have to be able to know content from earlier grades so that we can give kids what they need.

She would seek outside resources or provide assistance herself through some form of tutoring. She also believed that group learning helped students who were behind grade level. She explained, "Cooperative learning assisted kids having difficulty and kept lapses from being greater than they might have

been. Manipulatives and cooperative learning helped with skills and application of learning.” She provided all of her students with many opportunities to develop their conceptual knowledge through the use of manipulatives and by working in a group. Some students worked often with manipulatives, while other students did not need to use them as much.

Diane offered students who did poorly in reading and math the opportunity to stay after school for tutoring. She never complained about this service, but she realized that after-school tutoring was not the most meaningful context. She wanted to provide students with assistance but knew it should occur within the natural learning environment. “I kept them after school 2 days a week for an hour session. There has to be a better way, and it needs to happen naturally all the time. . . . Kids need more application work.” Diane wanted her students to have the remediation in reading through the experience of reading content material throughout the school day. However, she found it very challenging to provide students with the extra assistance and experience they needed within the school day.

Diane also made accommodations for students who had trouble managing their behavior. There were a few students over the 2-1/2-year period who behaved in a way that most teachers would consider annoying. Often they had difficulty functioning cooperatively in a group. Nevertheless, Diane encouraged these students to participate more in their groups; she solicited their responses and constantly praised their appropriate behavior. In spite of the negative behavior these students exhibited, they were treated with respect and had friendships within the class. Diane knew that how she reacted to them would determine how their peers viewed them.

One boy shouts out constantly and talks out loud to the teacher at inappropriate moments. I later complimented Diane on her ability to ignore this boy's behavior and involve him in positive ways. I told her that he would have trouble in other classrooms. She agrees and said she fears for some of her kids' success next year.

She demonstrated the same positive treatment toward Carly, a verbally aggressive student the previous year. When I commented about her positive treatment of this child, Diane said, "I know that kids treat Carly better because of how I treat her."

Diane's approach to instruction and management was student-centered in that she allowed students the freedom to discover concepts for themselves and encouraged students to self-manage their behavior. Throughout the year, she assessed students' progress and determined what types of accommodations to make for students to help them become successful. Diane was innovative in her framework for teaching and had a well-developed understanding of teaching, learning, and managing behavior. Diane considered the individual needs of all of her students and provided them with multiple opportunities to experience success.

Summary

The teachers' cognitive context, that is their instructional framework, influenced how they perceived instructional innovations. Kay, Martha, and Cindy had a standardized view of instruction. They relied on whole group, undifferentiated instruction as their main approach to teaching information to students. These teachers also taught in a swift, ordered manner in an attempt to cover all grade level content while not considering whether students had mastered new material. These teachers felt pressure to cover all content to expose their students to material they would be tested on in spring

assessments. Diane, on the other hand, had an individualized view of instruction. She used a student-centered approach to instruction that allowed for student discovery and natural learning experiences to develop conceptual understanding. Diane additionally used various instructional arrangements and strategies that allowed the students to self-manage and encourage positive behavior. She made diverse behavioral and instructional accommodations to assist individual and small group of students become successful.

CHAPTER 5

THE ROLE OF THE TLC AND THE REFLECTIVE FRIEND IN TEACHERS DEVELOPING INCLUSIVE PRACTICES

Elementary school teachers typically work in isolated contexts with little opportunity for interaction with colleagues or outside researchers. This study provided teachers with an opportunity to engage in a unique form of professional development. First, teachers met on a regular basis for 2-1/2 years with other colleagues and university researchers to help them develop more powerful classroom practices, particularly for students at risk for failure. Second, the reflective friend, an outside researcher with expertise in working with students who have mild learning and behavioral problems, worked with teachers on an individual basis. They had personal attention and assistance in their classroom for a 2-year period. The purpose of this chapter is to describe the role the TLC and reflective friend played in helping teachers learn inclusive practices. The chapter concludes with the changes teachers' made in their practices.

Role of the TLC

The collaborative group provided teachers an opportunity to come together and discuss what was going on in their classrooms. In year 1, the TLC met once a month in a half-day or whole-day session. For year 2, the TLC met every other month in a half-day or whole-day session and met in an hour-long meeting for the other months. During year 3, the TLC met every 3

to 4 weeks as a group for at least an hour. On few occasions we met for a half or whole day. By this time, the TLC group had grown significantly and the teachers decided to create primary and fourth-grade groups, since the entire fourth-grade team had joined. The TLC served two main functions for the group; it provided teachers (a) a forum for discussions and (b) an access to resources.

Forum for Discussions

The TLC was established under the premise that teachers would bring difficult classroom problems to the group, and the group would generate solutions for them. Teachers could talk about any concerns they had. Often they talked about their frustrations with individual students, class size, school policies, not having enough time, or paperwork. All concerns were valid, and often teachers empathized with one another. The TLC was the place to ask uncomfortable questions that did not have any clear or easy answers. Often we left questions unanswered and agreed we would have to reflect on them and possibly find more information to respond to them. The TLC served as a forum where teachers experienced (a) a structured vehicle for problem solving and (b) questioning of beliefs and practices.

Structured vehicle for problem solving. Most often the TLC served as a forum for teachers to discuss problems of practice. Teachers understood that everyone in the group would share an instructional or management problem they experienced. Typically, teachers took turns at meetings talking about the problems they had targeted. In year 1, we used a problem-solving format wherein an individual teacher discussed the specifics of the problem, and the

group generated solutions. At the end of those discussions, the teacher chose a solution to try. At the following meeting, teachers shared the progress of their problem. For example, Martha attended every collaborative meeting we had and contributed substantially to every meeting, except one. In most cases, Martha used the group to discuss problems she was having with individual students. These problems were mostly related to student behavior.

We began one of our earlier meetings with Martha discussing Hope's progress. Martha shared that she talked with Hope about the things she didn't like. . . . Martha reported with regret that Hope had been earning more sad faces than happy faces. Mary (UF researcher) and Martha discussed using a signal with Hope that would remind her of her behavior (i.e., negative interactions with her peers). Martha said that by just looking at Hope, she would usually mind. She said, however, that Hope is still wandering around the room. She is a "busy body." The group discussed ways to keep Hope on task. One teacher suggested giving her small amounts of work at a time. A second teacher suggested that Hope could ask a peer to correct her work. Martha didn't feel this was appropriate based on Hope's behavior. Two other teachers suggested circling the problem Hope is working on if she is on task and have Hope keep a journal and record the number of circles. Martha likes the journal idea . . . and might use it for Hope to write down her behavior progress.

Even though teachers like Martha discussed their problems and determined solutions, rarely did we hear about substantial changes. In fact, teachers often forgot to work on their plan and had little to report to the group about their efforts from one month to the next.

In year 2, we used action plans as a way to focus discussions. Using a similar problem-solving format as in year 1, teachers wrote an action plan that targeted an instructional or management goal. Teachers were to define the problem clearly, and the group was to generate solutions. Teachers selected and wrote out their plan of action. Then, to help teachers assess

their own progress, they had to describe how they would know if their plan were working. This step in the plan was an attempt to promote teacher accountability. Finally, teachers set a timeline for accomplishing their goal. As a group, we decided that only teachers who completed action plans could participate in TLC meetings. Teachers agreed that the group's purpose was to commit to solving problems of practice. For example, Diane targeted five students in her classroom who were struggling to read and had failed reading the first 9 weeks of school. She devised a tutoring program for them that she implemented twice a week using materials emphasizing direct instruction and phonics. By the end of the second 9 weeks, all students who participated in the tutoring had raised their grades to either Bs or Cs. She then devised a new action plan to target a student who was failing math.

By the third year, we moved from half- or whole-day meetings to hour-long meetings. When teachers met together in their groups, they addressed action plans. New members were assisted in the beginning, but Kay, Diane, Martha, and Cindy knew the routine. In fact, they helped the group by setting examples in their own plans. Cindy was concerned about her students' scores on vocabulary from last year. She decided she needed to do something that emphasized students' acquisition of vocabulary words. She learned about vocabulary materials, reviewed several vocabulary programs, and then selected one to use with all of the fourth graders. She developed a plan for the whole year that emphasized students' development of word usage. Each time we met, teachers briefly reminded the group of their plan and then explained their progress. If teachers were having difficulties, the group helped solve them.

The action plan served as a contract with the teacher and the group. It represented their commitment to working on changing something related to their management or instruction. In year 2, teachers needed a lot of assistance in writing their plans. Often they were too global in targeting a problem or unrealistic in their expectations. For example, one teacher's goal was that all students would read on grade level. Teachers needed assistance in defining specific problems. After the problem was defined, teachers needed help determining ways to assess their progress. Finding ways to assess was the most difficult part of the process. Only Diane used effective forms of assessment consistently in years 2 and 3. The remaining teachers had little idea about how to evaluate their work, and they were often concerned about not having the time to assess student progress. By year 3, all four teachers were all able to meet their action plan goals. Teachers accomplished goals in academic improvement for individual students, small groups, or as a class.

Teachers indicated that they liked sharing ideas. They liked having access to ideas for improving their instruction and management. In an interview Kay said, "Whenever I had a problem, there are certain [teachers] I would ask for advice. It didn't always work but at least I had different ideas to try other than the same old ones I had." Not all of the ideas were great; not all of the solutions worked; but teachers appreciated hearing about different ideas to consider.

Questioning beliefs and practice. During TLC meetings we often questioned the group about their beliefs about teaching and learning. This questioning process occurred in four different ways. First and most often, we questioned teachers about their instructional and management practices,

such as detention, grading, and student engagement. Second, teachers questioned each other about their practices and policies, such as implementation of remedial programs and using a social skills curriculum. Third, one teacher used the group to question her own practices on detention. Finally, another teacher questioned the practices of her non-TLC colleagues.

Researchers, most commonly, questioned teachers about their beliefs and practices. There were school-wide policies that worked against accommodating student diversity and we thought those issues were important to discuss in TLC meetings. We talked about detention, standardized testing, the fairness of grades, and advocating for students. We asked teachers tough questions and had them articulate their beliefs. Diane liked the process of having to articulate what she thought. She said, "We became reflective thinkers. We were challenged to articulate our beliefs about education and had time to do so." In spite of teachers acknowledging the dilemmas of detention, testing, and grades, the status quo continued. It was the personal conversations where teachers reconsidered their practices.

We questioned teachers about their individual practices. Sometimes, teachers were disturbed about some of the questions we asked. In a meeting with Mary, and me, Diane talked about a question that Mary had asked her earlier in an observation. Mary wanted to know why Diane did not make better use of her morning reading activity. Mary told Diane that was the perfect time to help children use strategies they were learning during reading instruction. Diane was perplexed by Mary's statement and wanted to know more. She said that her activities in the morning were just filler activities,

but Mary's comments made her realize she was wasting valuable instructional time.

Martha also began to respond to the questions we asked her about discipline. Martha was quite punitive in her approach to managing classroom behavior and expected her students to sit quietly in their seats for long periods of time completing worksheets. She often commanded students to "sit flat" during instructional time. We talked with her frequently about becoming more positive with students. By the middle of the second year, she had begun using more conferencing techniques with a few students who had trouble managing their own behavior. Martha said she took more opportunities to praise these students for their appropriate behavior when before she would have put them in detention for infractions without talking to them about their behavior. Now she worked on talking with them and noticed that not only did their behavior improve, but also their academic grades improved.

On occasion, Teachers questioned each other. In year 3 during a primary TLC group meeting, Diane came to the group and asked her colleagues their impressions of a Scholastic Reading test they all had to administer. As a result of the assessment, teachers would be able to determine reading levels of all of their students. Some teachers did not have much to say and others made a few comments. Diane had said the test was biased because it used examples in which her students were unfamiliar. She went on to explain an example about eating in a fancy restaurant and how her students did not have experiences like that. A few other teachers talked about how the answer choices were confusing. Teachers said students were

not accustomed to this test format and were not able to distinguish good answers from better answers. Teachers were most concerned about students being placed on reading levels on the basis of a single instrument that they found inappropriate. Teachers went so far as to question this practice as an appropriate school policy.

On another occasion, Dottie, a first-grade TLC teacher, had indicated interest in learning more about the remedial reading program that Diane had implemented in her class. Diane encouraged Dottie to try it because she had the REI class, and Dottie had talked about some of her students experiencing problems learning how to read. Dottie wanted to observe Diane during the 30-minute period she worked with her five students and questioned Diane about what was required to implement the program. Diane told Dottie she would have to plan the remedial program when the special education consultant was in Dottie's room. Dottie said she could not do that because Clara came during her math time. Diane told her she would have to reschedule math earlier in the day and have reading during that time. Dottie said she could not do that because she always has taught math in the afternoon. Diane chuckled and told her she would have to change her schedule. Dottie said no. Diane told her she could not say no, but she had to think it over first. Dottie agreed. Over time teachers used the TLC to talk about practices and challenge their peers' practices.

Some teachers also began to question their own practices. On occasion, teachers asked questions about practices that were troubling them. Martha brought up an issue that troubled her.

Martha talked about conduct grades. She brought this up out of the blue and prefaced it by saying, "I have done this for nine years and no one has ever complained. . . ." She explained that if students did not bring in homework for a day, they were sent to detention. Each day students spent in detention was a letter grade off of their behavior grade for the week. If students missed three homework assignments in a course of a week, they were in detention for three days and received a behavior grade of D for the week. I told Margaret I was concerned about how this affected low achieving kids and unmotivated kids. How could detention help them? Her colleagues shared with her what they did for their students.

For Martha, the group mainly served as a council where she could bring her concerns and seek advice.

TLC teachers also began questioning their non-TLC colleagues' practices. This type of questioning occurred with Cindy and her fourth-grade team, which was collegial and shared the same students. When Cindy began to advocate for students with disabilities, she had to question the practices of her colleagues and sometimes the actions of the administration. Cindy knew her ESE students needed accommodations to be successful. She spoke to her colleagues about modifying their expectations of these students. She knew that sending them to detention all the time for them not completing their homework did not help them. She began telling her peers if students repeatedly went to detention, then it was not effective.

Specifically, Cindy became an advocate for Leroy, an ESE student. Leroy often was in detention for not having homework finished and distracting his peers during instruction. Leroy could not read at a fourth-grade level and had tremendous difficulty completing his work. Cindy challenged her peers to make accommodations for him to assist him in being successful. Eventually, all the fourth grade teachers made minimal accommodations for Leroy in the form of reduced items on tests and providing

study guides. On another occasion when the school social worker suspended one of her ESE students for a behavior infraction, Cindy went to talk with him about the effectiveness of the punishment. She knew that the student had no idea what he had done wrong and felt the punishment was a result of a teacher overreacting. Over time Cindy viewed her ESE students as needing extra support and encouraged her peers to make modifications through study guides, altering assignments, or using partnered activities.

In summary, the TLC served as a forum where teachers had their beliefs and practices questioned, most often by researchers. Over time, however, teachers began questioning school-wide practices and their own practices and used the group as a place to work through concerns. One teacher began to challenge her non-TLC colleagues' practices.

Access to Resources

The TLC provided teachers with an information source, particularly for research-based innovations. Because the TLC was a school/university collaboration, teachers expected university researchers to provide information. Teachers viewed us as experts and wanted to learn about practices and techniques that worked. In group meetings, however, teachers began to discuss their own ideas. Some TLC teachers developed expertise in an innovation then shared it with the group.

Outsider shares knowledge. Teachers viewed the TLC as a source for new ideas but initially referred to us as experts and wanted us to tell them what the research said. Cindy kept emphasizing that she wanted to learn "research proven techniques." Teachers relied on the university influence to share the latest discoveries in teaching. As a group, teachers talked about

their common concerns, and we found information that might be relevant to them. We selected teacher-friendly materials that described practices similar to the teachers' current classroom practices. As a result of many observations in teachers' classrooms, we had an understanding of their practices, the curriculum they used, as well as their students' needs.

The group served as a vehicle for learning about new ideas. It was through meetings that teachers learned about CWPT and Cooperative Learning and were provided concrete examples of how to apply them. We knew that CWPT closely aligned with their practices and that even though it encouraged student interaction and increased noise, teachers would still use it. To introduce cooperative learning, I adapted lessons I had observed to include a cooperative learning activity. For example, I had observed Martha using a teacher-directed method to teach multiplication to her students. She reviewed each section in their text by modeling, then moving to guided practice, and ending with assigning homework for an independent task. I used the very same concept and discussed how Martha could have used numbered heads together, a cooperative strategy, to increase student participation. I explained what her role would be at each step and what students should be doing in their groups. I ended with how to assess student knowledge and collect grades. Teachers found this method of disseminating knowledge to be quite helpful. Diane talked about how helpful it was to have concrete examples from her own classroom. The examples helped her to visualize how Cooperative Learning strategies would work. We also shared with teachers a few focused reading strategies. Teachers were overwhelmed by the new curriculum and needed to learn how to use strategies effectively.

Therefore, teachers learned about teaching and using reading strategies that related to their current curriculum. These concrete and authentic examples allowed teachers to understand how the innovations could be implemented in their classrooms.

When we asked Cindy how she learned to be effective with challenging students, she replied, "Your suggestions that you have given me, through our meetings and things that I have tried." She admitted that over time she had learned how to work with students in different ways.

Because of the TLC the way I work with high-risk kids as well as regular education kids has changed. . . . We have worked toward [using] research-based methods that have been proven effective. Peer tutoring is one of the biggest things I've gotten out of TLC, as well as teaching strategies instead of teaching just skills.

The TLC provided teachers information that was more personalized as a result of the researcher's familiarity with teachers' classrooms.

In spite of the personalized approach to introducing innovations, not all teachers capitalized on the information we provided. Teachers used the innovations to varying degrees and implemented only the ones they were most interested in. For instance, Kay used some peer work at the end of the third year when students had finished their seatwork. Diane had implemented CWPT in math, reading, and spelling and collected data and had students score themselves during reading. Additionally, she implemented some of the Cooperative Learning strategies she had learned through the TLC workshop (i.e., jigsaw, numbered heads together). Martha implemented CWPT in math with consistency in year 3 and collected assessment data on student progress. Cindy used peer-mediated instruction

and taught and modeled more reading strategies. Teachers implemented innovations in their own way and in their own time.

Teachers share ideas. The TLC was established to help teachers develop a forum where they could problem solve together. As a result of the larger research project, researchers hoped over time that the collaboration would be self-sustaining without university involvement. Therefore, teachers' contributions were intended to be an important part of the TLC meeting, and teachers sometimes found they benefited from listening to each other's ideas. Diane thought TLC meetings helped her generate new ideas.

The TLC was very helpful. Coming up with the strategies not only by myself, but also with the group and coming up with things, making suggestions, giving input from our knowledge base. We learned to help children take charge more of their learning. . . . Students get more opportunities than they did before, numbered heads.

In spite of Diane's positive affirmation of this process, we noticed that teachers most often implemented ideas we brought to the TLC. As we worked with TLC teachers, we noticed that teachers offered few ideas. With the exception of Diane, most shared ideas that were not powerful for creating change. Teachers shared ideas based on their personal beliefs and their own personal repertoires. For example, in year 2 a beginning teacher joined our group. She wanted to improve reading comprehension skills with five students. Cindy suggested that Lynn consider skill books like the ones she used, which target reading comprehension. Often teachers suggested sending students to other teachers' classrooms for time out or for a special privilege, involving parents, and using familiar remedial resources. Teachers seemed reluctant to suggest ideas to their colleagues. Martha, who attended every meeting, rarely suggested ideas. When she did contribute, it mostly occurred

in year 3. I prompted teachers to discuss practices that I had seen in their classrooms. They did not contribute naturally but had to be encouraged to do so.

Diane, however, stood apart from the rest when it came to sharing. She often generated useful strategies the teachers could use. When Lana, another second-grade TLC teacher, discussed a management problem, Diane was quick to share a strategy that would assist all her students in monitoring their own behavior. She then went on to discuss a program that was available through the school that helped teachers provide social skill instruction and teach appropriate behaviors.

Lana (second-grade teacher) discussed her desire to improve her students' self-management skills and the group made suggestions. Diane suggests the "give me 5" management strategy. This cued students to check themselves to see if their body and minds are ready to listen and work. [A moment later] Diane suggests the Cub Scout Seekers program [program teaches students about taking responsibility for their actions and appropriate responses to make in given situations]. Diane implements the program with her students and has a meeting on Friday. All students regardless of their behavior participate in the meeting. Refreshments are the reward. Only students who earn it get the snack.

Diane was also helpful and encouraging to Lynn the beginning teacher, who often discussed the management problems she encountered. Diane made suggestions to help her and then complimented Lynn on her positive practices. On one occasion, Lynn talked about a student who was having difficulty managing his own behavior. She told the group how she typically addressed his behavior. Diane suggested using a check sheet for his behavior. She told Lynn to target four behaviors she wanted the student to demonstrate and give him a plus when he did them and a minus when he did not. Diane emphasized to Lynn the importance of increasing the student's

positive behaviors using positive reinforcement. When that happened, Diane suggested rewarding the student. Diane complimented Lynn for not backing the student in a corner by confrontation. Diane commented, "We are wiser for giving kids a way out." Perhaps Diane's more innovative instructional approaches and extensive teaching experience allowed her to serve the students better and feel more confident about sharing ideas. Clearly, teacher sharing seemed to hinge on her contributions.

In year 3, a few teachers developed new techniques or innovations as a result of working with me or reading material on their own. Teachers used the group to share their new endeavors and the results of their work. As the reflective friend, I knew what all the teachers were implementing in their classrooms. I asked them to be responsible for sharing their work with the group. Teachers brought in videos, resource materials, assessment data, and examples of students' work to share with the group. We noticed that as teachers became more knowledgeable about practices they perceived as powerful, they became more willing to share.

For instance, Diane shared instructional resources that she either learned about on her own or in the TLC. When she had implemented CWPT, she made three charts for her students that reminded them of the type of errors to look for, procedures in tutoring, and how to keep score during the session. She had them posted on the board each time they used CWPT. She also made scorecards that students could use easily to indicate how many points they earned. She had a quartered piece of paper that had numbers from 1-100 that allowed students to mark through numbers after each correct sentence their partner read. She found these charts and scorecards very

helpful tools for students. She shared with her colleagues what she had done. "Diane came in with all the charts she had prepared for peer tutoring and she had scoring sheets. She modeled helping behaviors and positive comments."

Diane also shared resources she used for after school tutoring. She shared different approaches she was using and even showed her colleagues the materials and how they worked. Anytime she had a resource that worked and someone indicated a need, Diane would talk about resources and then leave the meeting to bring the resource to the group.

Diane went to get the A Beka book she has been using after school with her students. She thinks it will help her students learn phonics. She shows the special education teacher the book and explains the type of skills it teaches students. The special education teacher wants one.

Cindy also learned about outside resources and shared them with the group. In year 3, she implemented a vocabulary program, Wordly Wise, with all fourth-grade students. The vocabulary books emphasized different skills in reading, and she used the resource to supplement her reading instruction. She previously learned about reading strategies through the TLC. She emphasized teaching "look backs" with her students. By year 3, she was teaching her students to use look backs, main idea, and summarizing while reading, and even emphasized these strategies when she used Wordly Wise. She shared these strategies with the group and described how the students were beginning to use the strategies independently. Unlike Diane, Cindy never collected student assessment data to verify student improvement.

As Martha used CWPT in her math classes, she shared her progress and the materials she used with the Hidden View TLC, her colleagues who did not participate in the TLC, and even colleagues from a TLC based in

another school. Martha learned about CWPT through the group and in the following year had the opportunity to share with others. Martha became the CWPT math expert within the school. Other TLC teachers referred colleagues to Martha as a resource to help their students improve basic math fact fluency.

Martha, Cindy, and Diane shared with their colleagues the practices that they had developed. They shared their successes and the barriers encountered, some brought in data to support the effectiveness of their work, and all showed teachers how they implemented strategies. These teachers also offered themselves as supports to colleagues who were interested in using their practices. Often teachers volunteered to discuss resources in greater detail or invited colleagues to observe. Through the TLC, teachers provided information about their practices to the group.

Issues to Resolve in the TLC Process

The TLC provided a source of support for the teachers; they talked about how they benefited from the process, and we noticed many positive changes. The TLC was almost like a club or sorority. TLC teachers got privileges that other teachers did not. During daylong workshops, teachers got to go out for lunch. For hour-long meetings at the end of the day, non-TLC kindergarten teachers covered TLC teachers' classrooms. TLC teachers were leaders in the school; they were grade level team leaders and vocal participants in faculty meetings. The TLC teachers became an "elite group," to use Ms. Summerlin's words, known for its hard work. Teachers could not join the group unless they committed to work on a plan for instructional or behavioral improvement. From year 1 to year 2, we lost TLC teachers

because of the commitment and expectation for working toward change. By year 3, the group almost doubled in size with 11 participants. Even though we were excited by the TLC's growth, particular issues affected the TLC's functioning. These issues were (a) teachers' dependency on outsiders, (b) lack of cohesion in the group, and (c) TLC as an added responsibility.

Dependency on outsiders. All the TLC teachers talked about the importance of having an outsider involved in collaboration. They liked the tailor-made professional development and appreciated having another professional to talk with about their work. Teachers also relied on us to schedule all meetings and workshops, set the agenda, and led all discussions. From the onset of the TLC project, we discussed how TLC teachers would be partners in collaboration and eventually run meetings without our involvement. At the outset, we tried to involve the teachers in deciding on a problem-solving structure, but they deferred to us. Cindy said, "You tell us; you're the experts." Even when I faxed information back and forth to a teacher and had her relay information to the other TLC teachers, rarely did the teacher complete the task. When we discussed how teachers would begin running meetings, teachers again voiced their concerns. They were not accustomed to depending on each other to learn and wondered how they could possibly provide valuable information to each other. Diane said this in an interview,

The coming together with meetings should be a part of [TLC process] but there will always need to be a third party. I don't see it ever happening, the group coming together without a third party. . . . I learned about different strategies and things for the children, where I don't think we know how to recommend that to one another. It seems it's just something else to do.

This statement was interesting given the powerful strategies Diane often suggested to the group.

All teachers articulated this same concern, and so did Ms. Summerlin. She said,

You need the university people to validate what teachers are saying and bring in what the research says. I am not sure if this would have happened without the university involved. There needs to be continuous contact with the university.

They perceived the real benefit of this project to be the outside role of a reflective friend who addressed the concerns of individual teachers. Teachers expected us to provide them with information, but they did not want to teach each other. In year 3, the group focused more on teachers talking about innovations they were using. We asked Martha, Cindy, and Diane to talk to the group about what they were doing and the progress they were making with students. All three of them had to be coaxed. A few teachers became interested in what these three were doing, but nothing ever happened beyond a demonstration at a meeting. Teachers believed that they needed access to effective practices and that role could only be fulfilled by university involvement. Teachers were uncomfortable sharing with each other, and nothing in their context encouraged them to do so.

Lack of cohesion in the group. Off and on, we heard negative comments from the intermediate teachers and to a lesser extent the primary teachers. For example, Cindy questioned the type of instruction that occurred in primary grades. She commented about primary teachers, "I think they are missing the boat. If I had a child in first and second grade that could not

read, that is what we would be doing. Mastery of skill, period." Diane knew her upper-grade colleagues made such statements. She commented,

I know the fourth-grade teachers want to know what is going on in second and third grade when it comes to reading. For some reason the state assessment reading scores start declining after second and third grade. I just don't think those comments are fair. I work hard to teach my students.

Such sniping seemed to reflect a lack of common vision in the school.

Cindy made vocal judgments about her colleagues when she knew little about them. Although most teachers admitted they knew little about their colleagues' rooms, it did not keep them from criticizing one another. Cindy was suspicious about the instructional practices of her primary colleagues. She seldom found whole group meetings helpful and questioned the value of collaboration when her beliefs differed so dramatically from others.

I understand that the goal is to help us to collaborate, but I really don't understand how that is going to happen. I think that is going to be tough. I have benefited most from not the whole group getting together and talking, but when the upper grades are together. That includes my whole team. You get more out of it when you're with teachers at your grade level. I get more out of meeting with [intermediate] teachers than with the primary teachers. . . . I listen to ideas, but I'm so focused on teaching reading that other things are immaterial to me. . . . I can't lose sight of my primary objective, teaching reading.

Cindy preferred meeting with her grade level colleagues even though they did not teach reading and had few ideas to offer. On the other hand, she liked sharing ideas with grade level colleagues on how to help individual students she and her colleagues were concerned about. Together the group planned how to help these particular students. This team was concerned about improving test scores, and they managed their students in similar ways. They expected students to work diligently for the entire period.

In the TLCs, teachers had trouble collaborating when they did not share the same ideas about teaching children. Often, they had no knowledge of their colleagues' beliefs or practices, would not follow up on a colleague's suggestion, or would criticize their colleagues. For instance, Diane shared some very effective practices with her colleagues, such as the remedial reading program. She even showed assessment data and helped a first-grade teacher rearrange her class schedule so she could try the approach. Yet, neither this teacher nor her colleagues followed through.

Because teachers viewed their responsibilities and practices differently, they were often critical of one another. They disagreed about trivial matters and could not decide whether to meet for an hour after school or in whole- or half-day sessions. Kay and Diane both preferred to meet after school because they did not like to plan for a substitute or be absent from their students. Other teachers preferred to meet in whole-day sessions and thought the day meeting together was important. Cindy made comments that Diane needed to relax and enjoy the day of professional development away from her students.

The group was diverse. It included teachers at different grade levels, with different beliefs about teaching and learning, and with different personalities. All of them had used practices that could have benefited their colleagues. Yet, teachers questioned the value of collaboration without researchers. It was difficult to address teachers' lack of trust for one another and find ways to build trust among peers.

TLC as an add-on responsibility. Hidden View was an average-sized elementary school with minimal resource support. They had a PE teacher

and a cultural arts teacher who worked with every class once a week. Also, every class had an assigned library time where teachers would leave their students with the media specialist. Besides resource time, which they often did not share, teachers only had a 25-minute lunch period. Teachers did not have time to meet with each other within the school day. Ms. Summerlin knew that the TLC needed to meet for whole- and half-day sessions and for occasional hour-long meetings, and all of these arrangements were problematic in some respect.

Because participating in the TLC was an added responsibility, time was difficult to find in a tightly scheduled school day. Teachers had limited time away from their students and few teacher planning days. We attempted to meet after school or for an hour during the end of the school day. Only when I set a time to meet did the teachers meet. Cindy acknowledged the dilemma of time when she said, "For the TLC to be beneficial, there's going to have to be scheduled time for teachers to interact. Unless the university plans a meeting there's no other interaction." Organizing meetings was always a difficult task. After finally negotiating with 6 to 8 different people about meeting times, on the day of the meeting a few teachers always had other commitments come up that prevented them from attending. When the TLC met for an hour after school, it was very difficult to find days when we could meet. Teachers often had tutoring 2 days a week, faculty meetings, and other personal commitments. Teachers soon were overwhelmed by paperwork, learning problems, school commitments, and fitting in the TLC. Our group work was an added responsibility.

Although Ms. Summerlin strongly encouraged teachers to collaborate, she did not set up structures for collaboration, and this only further reinforced teachers' views that the TLC was an added responsibility. With the exception of rare school committee meetings and monthly grade level meetings, Hidden View teachers did not meet with their colleagues. The school day was not structured to encourage collaboration, nor did Ms. Summerlin expect teachers to meet together other than at committee meetings. As a result, teachers talked openly about not knowing what their colleagues' classrooms were like, and the collaboration that did occur was the result of teachers' initiative.

For instance, some teachers did coordinate learning activities within their grade level. Diane and another second-grade teacher had coordinated a culminating reading activity for their classes. The collaboration between them occurred after school in one of their classrooms. Occasionally, two of the fourth-grade teachers coordinated learning activities in reading, writing, or social studies.

Ms. Summerlin liked her teachers to plan and teach together. Teachers volunteered to be a part of the TLC, and Ms. Summerlin encouraged all of her teachers to participate. Ms. Summerlin also emphasized the TLC being a teacher's choice and the extra work it would require on their part. Thus, participation in the TLC, like all other collaboration, was the result of teachers' own initiative and dependent on their personal motivation.

In summary, the TLC provided the teachers a forum for discussing their problems of practice and developing solutions to try. Teachers also had access to resources and information from both outside researchers and their

colleagues. Teachers implemented suggestions to varying degrees and chose to use innovations based on their personal interest. Despite the benefits teachers gained, collaboration was often difficult, and TLC teachers continued to depend on us. We coordinated meetings and provided information, and they benefited more from our presence than from their peers. Moreover, TLC teachers did not trust their colleagues as information sources.

Role of the Reflective Friend

My role as the reflective friend developed because teachers made few changes in their instructional routines during the first 5 months of the TLC. The main focus of our work during this 5-month period entailed meeting as a group and addressing individual teachers' concerns. As common problems emerged, the group discussed strategies that could be used in most classrooms, but teachers made minimal changes in their practices. In year 2, I worked more intensely with teachers, often observing each of them for 2 or more hours a week throughout the year. While observing teachers, I asked questions and offered suggestions, being mindful not to criticize. I felt it was imperative to reassure teachers that I was there to observe and understand their classrooms not to evaluate their practices. At first, teachers were uncomfortable when I took notes during observations. They would try to look over my shoulder while I was taking notes and interrupt me to provide rationales for their teaching practices and describe problems individual children were having. Consequently, I had to change my approach to observations. I began to interact with students more frequently and asked the teacher at certain times in the observation about specific things I noticed.

Over time, Kay, Diane, Martha, and Cindy became accustomed to my presence and began to trust me. In year 3, I observed teachers bi-monthly. Because of the extensive time I spent in their classrooms, they came to realize that I was interested in their work. All the teachers had different needs, and those needs defined my role. My role included (a) gaining trust and confidence, (b) acting as teaching partner and coach, (c) acting as research interpreter, and (d) promoting teacher reflection, problem solving, and efficacy.

Gaining Trust and Confidence

My initial role with teachers involved gaining their trust and confidence in me as a colleague. Having someone they barely knew come to their classroom to observe was unusual and perhaps frightening. For teachers to have faith in my ability to help, I had to roll up my sleeves and do the nitty gritty work with them. They needed to see that I knew what it was like being a teacher. I gained their trust through two activities, acting as an aide and acting as a substitute teacher.

I acted as an aide in all of the teachers' classrooms. I assisted each teacher with monitoring students' understanding of concepts during instruction. Often, I worked with an individual or a small group of students who were struggling academically. In Kay's classroom, I worked at a center with several students. Generally, she had me work at the letter table. I assisted students in completing worksheets on a specific letter, questioned them about their understanding, and used flashcards with them to reinforce letter words. On occasion, I worked at the number table where I assisted students in completing worksheets that involved counting and differentiating

between numbers. When students were not working in centers, I monitored students' progress with Kay and assisted them by writing student-dictated sentences with their pictures or by checking their work. In Diane's class, I worked with a cooperative group, helping them work on their group assignment. I typically worked with half the groups while Diane assisted the others. In Martha's class, I monitored all students during seatwork, but I specifically worked with students having difficulty. Cindy liked to have me work with the ESE students to provide them extra assistance. All teachers saw me as a knowledgeable special educator and appreciated having me assist their students, particularly those who had academic difficulty.

I also helped the four teachers complete tasks throughout the day. Diane liked me to run errands or make the copies for her while she continued teaching her class. For example, on one occasion I helped Diane prepare centers for her classroom. She found a book on designing centers that emphasized the skills students needed to practice and asked me to help gather the materials and assemble centers. We worked until late after school finishing the centers. Diane appreciated my help. I read through the center descriptions and made lists of all the supplies she needed, helped her assemble the centers, made copies for her, cleaned out homework folders, scored reading tests, and graded student work. She was glad to have extra assistance, and my presence helped us to establish a working relationship and a better understanding of each other.

I also gained teachers' trust by covering classrooms for a half or whole day when substitutes were not available and then used those moments to talk about my understanding of teachers' concerns. I substituted for three

teachers. During an observation in Kay's class, we were interrupted by a fire drill. On the way back into the classroom, a parent volunteer twisted her ankle. Kay left the room for an extended time and left me in charge of her 33 kindergartners. I joked with Kay about keeping 33 squirmy children attentive during story time and a quiet game, but I was never quite as effective as she was. I acknowledged the difficult task she had in teaching and managing such a large class. Once, I covered Diane's class for a day when she was absent and her substitute did not show up. Laura, one of the other second-grade teachers, was going to have both classes in her small classroom. I knew Diane's management style and Laura's management style's were very different and felt that crowding 45 second graders into a small classroom was a bad idea. I volunteered to step in as a substitute. I also substituted in Laura's class once for the same reason. Diane had all of Laura's class in her room with children sitting on the floor and the aide and ESE teacher stepping over children. Diane made me plans, and I taught Laura's class. Since Diane was also teaching Laura's language arts class, we were able to talk about students' problems and my observations that Diane had planned too many activities. These experiences created opportunities for building trust and understanding between the teachers and myself.

Teaching Coach and Partner

Once I established positive relationships, teachers viewed me as one of them. They knew I had expertise in special education and as a classroom teacher in elementary education and gifted education. They often asked my advice about how to handle a situation or about my experiences teaching. Teachers also viewed me as a coach who could assist them with developing

skills. My role as partner or coach depended on the level of support needed by the teacher. The more standardized view of instruction held by the teacher, the more coaching they required. Many of the strategies I assisted teachers in developing moved away from a heavy reliance of text dependent and whole group instruction. Over time, my role evolved from coach to partner with Cindy and Diane. With Martha, I always remained a coach. Kay resisted assistance in developing an innovation.

At first, Martha needed intensive assistance for long periods to use an innovation successfully. As she developed new skills, I gradually reduced support. From time to time, I observed Martha teach concepts incorrectly. In year 2, I tried to help Martha improve instruction in her remedial math class. She tried CWPT with her homeroom class incorrectly. After giving her feedback about her attempt, Martha wanted me to model the procedures for the children. She would not continue to use CWPT unless I was observing in the classroom and could assist students. I had to demonstrate procedures for her in the context of her own classroom.

Because Martha needed so much assistance to implement new practices, I looked for sources that would help her become more strategic and determined that a scripted math program might help. At the same time, the school district was offering \$500.00 grants to teachers who wanted resources to improve students' learning. I wrote the grant for Martha and designated the money for flashcards and to purchase the Strategic Math Series. The grant provided an incentive for Martha to continue using CWPT. As in year 2, I provided her assistance and coaching in preparing her students to use CWPT regularly.

To a lesser degree, I assisted Cindy in developing the skills necessary for implementing CWPT. Once I described the success Diane was having with CWPT and how Martha was using it, Cindy wanted to try it, too. That very day I set up Cindy's class for CWPT. I helped her learn the procedures and monitor student progress. Cindy, however, did not need the same level of support as Martha. She quickly learned to implement the procedures and was motivated to do so. She did ask for my advice occasionally. She would put me on the spot and ask for a strategy or an idea to help the students as they were about to start a task. Acting as a coach allowed me to assist teachers in implementing innovations correctly and to offer them feedback on their attempts.

My role with Cindy slowly evolved from coach to teaching partner. As time went on, we often talked about ways to use different approaches to teach the same concepts. Cindy wanted students to learn from their mistakes and wanted ideas for accomplishing this goal. For example, Cindy expressed concern about helping students improve their grades. Specifically, she wanted to know how she could effectively review the reading theme tests that she gave once a month with students who made Cs or lower. I wrote down these four recommendations. They were as follows:

1. Review the first question with the whole group and model aloud for them how you would go about answering the first question.
2. Pair A tests with D tests, B tests with F tests, and C tests with other A and B tests. Let them in pairs go over each item and determine why points were taken off for each answer. Then have the students correct their wrong answers based on rereading the selection.

3. For the multiple choice responses, the students should determine what the right answer is and then write the line or supporting evidence from the selection to support their correction.
4. Review the theme tests as a group once they finish.

At lunch I talked with Cindy about my suggestions. She decided to have students work with a partner to review their tests. The more able partner provided evidence that explained why their answer was correct. Cindy especially valued the opportunities to interact frequently with another educator. When asked by a local reporter to explain the TLC project, Cindy said, "It's like taking an instructor with you throughout the whole day. They are there for you." Cindy preferred to have another professional around for her to bounce ideas off or to provide her with feedback and assistance.

For Diane, I was a colleague with whom she could plan with and count on to help solve problems. Diane felt somewhat isolated from her peers. She knew her colleagues thought she worked too hard, and she felt that they had vastly different views about how to teach and manage students. Having access to an outside researcher with whom she shared similar beliefs about teaching and learning was a benefit. Diane said about this process,

I learned more by doing and showing like in the workshops. [Having someone] come into the classroom and do some role-playing and things really made sense. We could act out for the kids what we wanted them to do.

When I went into Diane's class, I acted as a teaching partner. She and I modeled procedures for students, brainstormed how to solve potential problems, and created materials together.

Diane missed the TLC workshop on using CWPT, so I met with her individually to talk about the information we had shared with the group and

how I role-played procedures for the teachers. She liked the idea of role-playing and wondered if we could do the same for her students. We talked about what would benefit students and how to model that behavior. The following day, she and I prepared her students to use CWPT. Diane introduced me and explained all the materials students would need. The two of us modeled tutoring behavior for them, and then we monitored the students. After this process, we discussed the next steps Diane would take in using CWPT. We talked about ways she would use the points to reward students who were making progress and how she knew the pairs were progressing. Diane liked having a partner with whom she could try something new and then collaboratively fine-tune the strategy.

The following year when she implemented cross-grade CWPT with a first-grade class, we talked again about how we should model procedures for the students. Diane had two other adults present in the room, the first-grade teacher and the special education teacher. The special education teacher participated in the CWPT workshop the year before and often had been present when I coached Martha to use the strategy. Although she now had access to two other teachers, Diane and I still talked about how students should be grouped, procedures we should cover, how we would model the procedures, and problems encountered during implementation.

With the exception of Kay, all the teachers benefited from using coaching to help them implement the innovations they were learning. As Cindy and Diane developed their practices, I began acting as a teaching partner, assisting them in planning and problem solving. All the teachers

liked having access to someone who knew their classrooms and who had ideas for addressing some of the problems they encountered.

Research Interpreter

Because we were university researchers, TLC teachers saw us as providers of information. Teachers expected to learn about “research proven techniques” that would improve academic and behavior problems. I shared information with teachers on CWPT, Cooperative Learning, homework charts, phonological awareness, reading strategies, and strategies for being more positive with students. However, I did not just provide information. I also improved teachers’ access to that information. Teachers wanted to know how innovations would work in their classrooms. I helped teachers apply information from TLC workshops by role playing CWPT procedures. I also gave teachers examples of how to use cooperative learning activities in their classrooms. Not all teachers used the information, but some did with varying degrees of success. For example, Diane frequently used jigsaw and numbered heads together. During vocabulary reviews, Cindy also used numbered heads together. Martha implemented an occasional cooperative activity without using a particular structured format.

I also found that action plans offered another opportunity to help teachers apply innovations discussed in TLC meetings. As part of the action plan process, we developed solutions. When teachers tried to develop solutions to problems, I often prompted them to consider strategies that we had discussed. I talked with them about how an innovation could be used to solve their particular problem. Other times, I found outside information for

them. I summarized information so it was easier to understand and highlighted points that were most applicable to their situation.

Unfortunately, Diane found my assistance so valuable that she preferred it to working with her TLC colleagues. She only wanted information that would be appropriate to her concerns. Often, Diane would discuss her academic concerns, and within weeks I would find related resources. For instance, Diane was using cooperative groups from the beginning of the project but had difficulty getting students to work together and complete activities. I shared information about assigning students roles in the cooperative activity and techniques for developing appropriate social skills. Diane indicated that access to the reflective friend was the part of the process she liked the most.

When the group expresses concern about situations and (UF) is aware of things that could be done and would share . . . having a personalized workshop. That's what I want to see more of. . . . UF would bring an article--things like that were so great. It was like having a resource that was personalized just for you.

She benefited from having a knowledgeable person summarize, explain, and provide concrete examples.

I often summarized research findings for teachers and described procedures for implementing research-based innovations. I read information and would highlight sections I thought would most interest the teachers. Because they were very busy, I knew they had a better chance of implementing a technique if they only had to read the most relevant parts. Most often, I was able to personalize my interpretation of the research by meeting with the teachers individually to develop their action plans. I worked with Kay, Cindy, and Diane in this manner. Using action plans provided an

opportunity to explain how innovations applied to their personal situations, and we planned how to use the innovations in ways that they could manage effectively.

Promoting Teacher Reflection, Problem Solving, and Efficacy

Because I did not have classroom responsibilities, I was able to help teachers in ways that promoted teacher reflection, problem solving, and sense of efficacy. By assessing students and questioning teachers, I could challenge beliefs and practices to promote teacher reflection.

I provided Cindy and Diane with assessment information on specific students. Cindy wanted information on low-achieving students who were struggling in reading. I suggested using the Qualitative Reading Inventory II, an easy-to-use assessment that would provide varied information about individual students' reading performance. I tested five students. When I provided the test results, I talked with her about the students' learning problems and the strategies she could use to help them. Specifically, her students experienced different types of problems; some had difficulty with fluency and others had difficulty with comprehension, retelling the story, or prediction skills. Cindy was overwhelmed by the diversity of reading problems and wanted to know what she was supposed to do since they all needed different kinds of help. She was compelled to change her instruction and wanted to hear some suggestions. We talked about how she could use CWPT and implement specific activities that could address each of the problems students experienced and how the activities would help all students become better readers. Cindy talked about her initial concerns, and we found ways to address them. A few weeks later, Cindy implemented CWPT with all

of her classes. Cindy appreciated the feedback through reading assessments that helped her understand the difficulty students were having. She liked having an outsider with whom to discuss student data and how she could change her instruction to address problems in reading. Knowing that 25% of her students had difficulty and seeing assessment data that showed the diversity and complexity of their problems compelled Cindy to reconsider her practices.

I used curriculum-based assessment for students whom Diane recognized as having fluency problems. I assessed low readers on Dolch words and gave 1-minute timings to everyone. I found 10 students who were not reading 100 words a minute. Even though she had access to a special education consultant and a teacher's aide, Diane simply could not find time to complete these assessments. She gave me quick directions on what she wanted, and I gave her thorough feedback on her students' performance. Diane and I would share our observations on an individual student to understand better how to help them. I suggested strategies, and then Diane and I discussed barriers to implementation until we found the most feasible and effective solutions.

I also assessed a student in Diane's class, Wendy, who lacked many prerequisite skills and was reading at the preprimer level. I discussed my assessment results with Diane and was concerned that Wendy would be placed in a self-contained class. Diane talked about Wendy being in foster care and how she had never been in one school long enough to get the instruction she needed. Diane said she had noticed that Wendy had some knowledge and skills but also had glaring holes in concept knowledge. She

wanted to work more with her independently before she would consider referring her to child study. I talked with her about using some of the curriculum-based materials I had for repeated practice and talked with her about using Martha's Strategic Math Series for developing math concepts. We copied several lessons from the series and Diane borrowed the teacher's manual from Martha. Over the next few weeks, Diane shared glowing reports of Wendy's progress.

In year 3, I assessed all four third-grade classes three times to compare CWPT participants with non-CWPT users. Martha had trouble collecting data regularly on her own. Martha was thrilled to know that her students were significantly more fluent than the others. She became more committed to using CWPT and talked openly with her colleagues about how it improved student fluency and motivated students.

In addition to assessing students, questioning was also an important tool for promoting reflection. As a participant observer, I could question the teachers' practices and provide feedback. I usually talked with teachers after I observed them. I questioned teachers about their students, without pretending to have solutions to their problems. In fact, I was often perplexed by some of the difficulty students experienced. Through questioning, I was able to prompt reflection and encourage discussions that often led to teachers problem solving.

Kay taught kindergarten, and her students left school at 1:45, 1 hour and 15 minutes before general dismissal. She was expected to stay until all teachers were allowed to leave. It was during the late afternoon that the two of us discussed her concerns about students, my observations, and potential

solutions. I often asked Kay about students who struggled academically. Although she said she had a good class and that no one in her class was low, I knew that was not true. I asked about Julian, Mark, and Marquan. She often did not know why they had difficulty or what she should do about them. I asked her if some of the more capable students could assist these students. Kay did not like students helping each other because they often looked on their peers' papers for answers. When they did, Kay did not know if they could do the task independently. I pressed Kay about how peers are often good models and sometimes better teachers than adults. I also asked about how she could provide more assistance to these students. Over time, I saw her allowing stronger students to assist the students having difficulty. Also, I began to notice that Kay started grouping Mark, Julian, and Marquan near her when she provided directed, whole group instruction. After getting the group started on one part of the assignment, she would assist them. She spent more time instructing them and modeling for them.

Our meetings allowed us to discuss students. Kay was positive about her students, but she knew some of them struggled. I took opportunities to question her about specific students even if she claimed students were doing well. I asked about what she did to help students and then offered her ideas on peer work, modeling, and multiple opportunities for practice. She knew she had to find something that worked and knew what she was currently doing was not effective. It was important to question her to prompt reflection about students and her practices. Eventually, I saw her make small changes by allowing peer assistance and increased modeling.

My relationship with Cindy was open. She wanted the advice of another teacher whom she saw as expert, and she turned to me. Because of her motivation, I could ask her difficult questions without offending her. Through our conversations and my observations, I became aware of Cindy's dilemma with low-achieving students. Cindy was very concerned about helping her low-achieving students but felt pressured to cover the skills and content of the fourth-grade curriculum. She depended on after-school tutoring in reading and classroom volunteers to close the gap for these students. What she did not understand was that her view of curriculum was presenting problems. I began to challenge that view. I asked Cindy about the fairness of grades, content versus mastery, and accommodations for students with learning problems. Although Cindy never reconciled grading, she did implement more project-based assignments and oral reports to evaluate students who had difficulty with written tests and papers. She knew that students had different strengths, and she could make whole group changes that helped low-achieving students perform better. When her colleagues gave students assignments that were to be completed independently, she assisted small groups of students whom she knew to need extra assistance. She also talked with her colleagues about allowing students opportunities to work with partners and described how this helped many of the students in reading. She became an advocate for accommodating students through partner work and study sheets, and only testing relevant information. Eventually, Cindy began to question the very practices she had endorsed for many years. She began to discuss the importance of mastery and ensuring that students had mastered basic grade level skills before teachers moved to new concepts.

Martha, who was not particularly reflective, took more time to understand the purpose behind my questioning. For 3 years I had questioned her about her treatment of disruptive behavior. I frequently pointed out how her students needed constant reminders to act appropriately. As Martha became more positive, she realized that positive reminders were more effective with students than constant reprimanding. She commented one time,

You provide feedback and I leave thinking it was a complement. But later when I go home, God says to me that wasn't a complement. They [researcher] were trying to tell you to change, but they said it so nicely, you did not even realize it.

It was this questioning of beliefs and practices that caused her to reflect on becoming more positive with students.

Assessment is important to inform teachers about the effectiveness of their instruction and types of learning problems students experience. However, not all TLC teachers had time to assess students or had knowledge about research-based methods. Teachers appreciated someone else assessing their students to inform them of learning gaps, individual progress, or group progress. Through sharing assessment data on students, teachers were able to problem solve with me and often experienced an increase in efficacy when they saw the effectiveness of an innovation. For instance, Martha said this about problem solving,

It allowed me to change some of my teaching methods. I am grateful for the solutions and for the grant being written. [Implementing CWPT and the Strategic Math Series] has increased motivation for math. I have verbally shared the curriculum and strategies with the third, fourth, and fifth-grade teachers.

Additionally, questioning the teachers challenged them to reflect about their beliefs and practices.

Issues to Resolve in the Reflective Friend's Role

Spradley (1980) acknowledged the ethical dilemmas that participant observers often encounter. As a researcher, you are an invited guest in a school and classroom and in the professional lives of teachers. Because you have freedom to move about the school throughout the day, you witness many events that other school personnel do not observe. All teachers, whether they participated in the TLC or not, knew who I was. They were friendly for the most part, and as a result of my continued presence, I could see how they treated children. There were occasions when I witnessed a particular teacher screaming excessively at a child for a classroom infraction. Other teachers near her room quietly shut their doors, and no one said a word about it. I was troubled by such events, cried a few times, and struggled with understanding my role as invited guest. I encountered similar dilemmas as I observed the TLC teachers. Over time, I fostered trusting relationships with these teachers and did not desire to do anything that would jeopardize those relationships. At the same time, I witnessed instructional and management practices that sometimes made me cringe, and I wondered what my obligation was to the principal. I also saw teachers draw unfair conclusions about children's behavior, when in my judgment, their instruction was the major problem. I did not know how to maintain a friendly, professional relationship when my views of teaching and learning were so at odds with the teachers. Moreover, because most of the teachers were entrenched in traditional views, I knew it would take a good deal of support to help them

engage in more innovative practices. Thus, I continually wondered how to help teachers who had dramatically different beliefs about teaching and learning and how to help teachers reconsider their views of students.

How to help teachers who have dramatically different beliefs about teaching and learning. My greatest challenge was developing friendly, trusting relationships with teachers when I was troubled about some of their practices. All of these teachers were committed to teaching. They were a part of the TLC because they wanted to get help with the challenges they encountered. Nonetheless, I witnessed three of the teachers humiliate or shame students. I had difficulty watching these episodes and left the school angry. I found one teacher's practices particularly troubling. She was very rigid and controlling, often forcing children to comply. Her instruction typically was uninteresting, with students sitting quietly in their seats completing worksheets for long periods of time. I wondered how to assist a teacher who was in need of so much help. It was hard to know where to begin.

Fortunately, I worked with other researchers who had worked in limited ways with these teachers. They encouraged me to see the positives and reminded me of the teachers' good qualities. I also found small ways to assist the teachers that seemed to help the children. I helped them provide feedback to students and modeled behavior that supported my view of behavior management. As I began to understand their classroom practices and beliefs about instruction, I suggested changes that potentially would be well received. I targeted problems that could be solved in a reasonable way. For Martha, who sent students to detention for not turning in homework, I suggested a homework chart. I knew Martha wanted students to be

responsible for their own behavior, so I suggested a method wherein students could check a chart to see if they were missing assignments. I told her she did not need to confront students verbally but could send students to review the chart. Martha used the chart and recommended the practice to her other TLC colleagues. In time, I saw Martha make major shifts in classroom management practices

In spite of the teachers' shortcomings, they were committed to their students. All of the teachers enjoyed teaching and liked children. They were determined to do the best job they could. It became important for me to remember those facts about them when I observed them in their classroom.

Knowing how to help teachers reconsider their views of students.

Another issue I encountered was advocating for students while supporting the teachers. I have strong inclusive beliefs, and the purpose of the larger research project was to help teachers include students with learning and behavioral problems. At times, teachers strongly advocated self-contained classrooms for students or that students be medicated so they would behave appropriately. In year 2, Cindy had two students, Leroy and Lane, who were constantly in trouble for not completing their homework. Leroy was an ESE student and could not read the assignments he was expected to complete. Lane was very bright but unmotivated to complete his work. Cindy recommended that Leroy be placed in a self-contained ESE classroom because he could not do the work without assistance. She believed Lane to be gifted but refused to have him tested; she feared he could not handle enrichment classes and keep up with his work. I felt that Cindy's instruction and expectations were the problems in both cases. For Leroy, the instruction

was too difficult. For Lane it was too boring. Also, Leroy was being held to the same expectations as the other students, and he just could not manage. I started to press Cindy to reconsider her opinions of these two students. I talked with her about Lane's home situation and how she should not penalize him for the lack of support he receives at home to complete homework. I challenged her to find supports within the school that could assist him with completing assignments. After a few weeks, she did so, and rarely did she have problems with Lane not turning in homework. With Leroy, I kept reminding her that he could not read on a fourth-grade level and what that meant for him in every other subject that required reading. I told her that providing him assistance with reading material was not doing the assignment for him. Over time, she allowed Leroy to have assistance from peers and school volunteers and began to help him herself. My relationship with Cindy and the other teachers allowed me to challenge their views and practices.

Sometimes teachers had very challenging students, and I wondered if it was fair for me to challenge their recommendations for self-contained placement. Diane had a student with mild mental retardation who functioned academically at a kindergarten or entering first-grade level. She struggled to find ways to meet his needs through peer tutoring and individualized instruction. Ultimately, she could not reconcile her need to teach a second-grade curriculum and the child's current functioning level. She was inclusive in her beliefs, as long as the child could fit into the mainstream curriculum. I attempted to advocate for including the child but realized that given the school and district view of grade level expectations, it would be difficult for

Diane to restructure her instruction to meet this child's needs. Consequently, I gave up, and the child was moved to a self-contained class. In these cases, it was difficult knowing when to challenge teachers' practices and beliefs and when to support them in their decisions.

Changes in Practices

Through working in the TLC and with the reflective friend, teachers made positive changes in their practices. The teacher's personal frameworks influenced the degree of change and the types of changes they made. In this section, I provide descriptions of the changes teachers were able to make and relate them to their approaches to teaching.

Standardized View of Instruction

Kay, Martha, and Cindy all operated from a standardized instructional framework. Kay taught kindergarten concepts using primarily teacher-directed, whole group instruction with some individualized remediation once students demonstrated repeated failure. Martha was rigid in her expectations of students and insisted that all students follow along through teacher-controlled instruction. Cindy also was teacher-directed; students listened to her and had limited opportunities to develop their own understanding through group or independent assignments. All teachers used teacher-directed, whole group instruction with little peer-mediated instruction. Both Cindy and Martha had rather rigid expectations for behavior and dealt with behavior using primarily punitive measures, but Martha was the most authoritative. Kay had more positive approaches to student behavior, although she, too, could be judgmental and often shamed students for noncompliant behavior. For example, during her typical morning

routine, Kay went through students' homework folders and reviewed individual student's work in front of the group. On one particular morning when Kenan did not have his homework, she said in a loud and irritated voice, "Kenan, you did not do your homework?" She stared at him intensely and silently shook her head. As he began to offer an explanation, she ignored him. Students who brought their homework, on the other hand, were loudly praised and, at the teacher's prompting, applauded by their peers.

A standardized instructional view, however, did not prevent the teachers from changing. During the 2-1/2 years of this study, they moved toward student-centered instruction, evaluated the merits of innovations on the degree of student change, used alternative instructional groupings, and considered using more refined assessment instruments.

Move toward student-centered instruction. Initially, all of the teachers had students in their seats for long periods working on independent assignments. Over the course of the study, teachers slowly changed how they structured learning activities; they often needed considerable help to do so. For example, after I helped Martha to write a grant to implement a strategy-based math curriculum and CWPT, she began to extend what she learned throughout her math curriculum. Martha taught math strategies and used manipulatives to support students as they developed conceptual understanding of new concepts. In year 3, Martha introduced the concept of multiplication to her math class. She explained how multiplication is similar to addition and then had students work with a partner on a teacher-made assignment. Students walked around the room and looked for sets of similar objects. Martha had displayed groups of items--rulers (three groups of three),

pencils, markers, boxes of flashcards--all around the room. Students with their partner were to write how many groups and how many items were in the group. Students then used addition to answer the problem. Later in the lesson, students worked with a partner using unifix cubes to solve multiplication problems.

Previously, Martha had rarely used manipulatives, and when she did, she manipulated the objects. When she was not using the manipulatives, she hung them on the classroom board for decoration. By year 3, she had students do partner work with manipulates when she introduced concepts. It was her implementation of the Strategic Math Series in after-school tutoring that helped her see the need for students to use concrete objects to develop conceptual understanding. Seeing students improve helped her to understand that all students benefit by using manipulatives.

Cindy, who previously talked about the difficulty of differentiating instruction for individual students, discussed how she modified her instruction for the group, which, in turn, resulted in accommodating individual students. She realized that by making changes for the group individual students improved. Cindy acknowledged that moving to a more student-centered approach helped students who needed extra assistance become more engaged in their own learning. She explained how adjusting her instruction met the needs of Tommy, a child who had difficulty attending to the teacher.

I try to avoid the type of lessons where I am teaching to the whole class. He [Tommy] just learns better when someone is right there with our partners and not having to follow along with the teacher. I structure my classes where I do not have to talk the whole time. Some

times I have to address the class and he has trouble with that. He does all right with partners, but he doesn't work well by himself.

Cindy also used higher order questioning to engage her students.

When leading class discussions, Cindy asked higher level questions and demonstrated teaching strategies to improve students' understanding of reading or vocabulary. If a helpful hint worked in one class, she would use it for her other classes. On one occasion, I noted during a vocabulary lesson that Cindy took the words out of how they were used in the vocabulary books and related them to what students knew. When the text used the word elimination, Cindy asked students if they watched the sports channel. She then asked what double elimination meant in baseball. She questioned them as to the meaning of the word in the context of her example about baseball. Then, she had them relate the meaning of elimination to the new context that was used in the book. She gave hints and clues as to how to remember what the words meant. When students gave incorrect responses, she asked them a series of questions until they understood what the correct answer should have been. She also related helpful hints or stories of how to remember meanings of words that came up in previous classes and also shared the reasons many students had trouble with specific vocabulary words. She discussed the problems and helped to clarify understanding.

As a result of academic improvement and increased engagement, Cindy became an advocate for change. She saw growth in her students and wanted to make sure that she kept engaging in practices that were working. By year 2, I noted that "Cindy starts showing me her plan book. She told me that she is trying to write down what went well and what really didn't so she

could be more effective next year." As students became more engaged in their learning, students improved academically and teachers became more committed to change.

Students' responses to change. As teachers began to try new practices, students began to respond to them. One of the factors that contributed to Cindy's commitment to change was her students' reaction. Students became excited about working with partners and often asked if they were working with partners as they entered class. As students became more interested in the activities, Cindy noticed that student commitment to the task improved. Over time, she noticed that they were implementing the strategies she taught in class. For example, Cindy said about peer tutoring,

I have seen benefit and that is why I keep trying it because I see it working. If something is not working, I will stop. My kids are real excited about working with a partner that they ask a lot [to do so]. I see that the kids have gotten in the habit of practicing certain strategies.

Martha also talked about how students responded positively to CWPT. She told other teachers that the main benefit to CWPT was the increased level of motivation among her students. Students looked forward to math because they began each period with CWPT and had an opportunity to improve upon their previous timing.

As these examples illustrate, students responding in an enthusiastic manner created motivation for teachers to keep using new practices and prompted them to continue to search for more engaging practices. When instruction became more student-centered, teachers noticed that students were motivated to continue in their own learning and they expressed their enthusiasm for doing so.

Use of alternative instructional groupings. Making changes was a challenging task. Most of these teachers liked their classrooms quiet in part because teachers taught the same way for many years. So changing instructional routines to allow for more interaction was a frustration to teachers. For example, Cindy was structured in her routines and controlled student interactions. For the most part, her class was quiet with her determining when students could contribute. Cindy had to adjust to the noise when she started to incorporate group assignments. During year 2, I stopped by to say hello to Cindy. She said she was doing cooperative groups and it was killing her. The students were noisy and having trouble getting started on the assignment. The students at a glance seemed to enjoy what they were doing and all were participating. I encouraged her to persist. Over time teachers became accustomed to the increased noise level. They worked with students on developing quiet communication with their partner or group.

Teachers used cooperative groupings involving three to six students, peer tutoring, and partner work. Kay had the most difficulty moving to peer-mediated work. Kay initially thought that her kindergartners would not be able to work with partners or cooperative groups. For a long time she insisted that her students did not have the maturity to work in partners. However, after hearing about the positive effects of CWPT for a year, she implemented some peer tutoring in year 3. Kay had taught kindergarten for over 10 years, and it was difficult for her to change routines established long ago, but as a result of large class sizes, she knew she had to create other opportunities for her students to practice new concepts. She could incorporate the use of peer tutoring because it allowed students to practice color words, alphabet letters,

and numbers, skills Kay emphasized on a daily basis. While Kay was willing to implement some peer tutoring, she did not implement other strategies that could not easily be accommodated into her current instructional and behavioral routines.

By year 3, Cindy's students rarely worked independently. Most often, students worked with partners and in cooperative groups. Similarly, Martha began both math classes with peer work. Eventually, she allowed partners to work with manipulatives and on some math assignments. As teachers saw the benefits of changing their instructional routines, they continued to use peer-mediated instruction and cooperative learning groups. Over time, they came to tolerate productive noise.

Consideration of refined assessment instruments. Teachers were accustomed to checking students' understanding with unit or thematic tests. Rarely did they have any understanding of how students were progressing on an ongoing basis, with the exception of Kay. Kay frequently worked with students individually. Most of this instruction focused on letter and number recognition, and as a result, she had a good understanding of her students' progress in these areas. Kay used this assessment approach throughout the study. In contrast, Cindy and Martha had virtually no strategies for collecting continuous assessment information. Although they gave daily homework assignments, they did not evaluate those assignments closely to determine students' problems. By year 3, Martha was using one method for collecting continuous student data. She implemented CWPT three to four times a week with both math classes she taught. Students took turns testing one another in basic math fact flashcards. After this procedure, Martha gave

students a timed test. Every Friday, she gave a 1-minute timing and recorded their scores. Martha had students report their scores on timings and tell her if their score had increased or decreased. Martha challenged students to improve their scores by increasing their fluency through practice. She knew who was improving and had weekly data to support her conclusions.

Cindy discussed the need to use more effective assessment techniques to determine students' progress. In the beginning, she talked about student scores on state assessments as her way to determine if and what students learned. We argued that one assessment at the end of the year would not help her in determining the adjustments she should be making for her students. We continued to challenge Cindy's assessment practices. Over time, she saw the need for checking students' learning as they progressed throughout the year. She used more teacher-made reading comprehension tests to determine their understanding of reading material and their use of strategies. For example, when Cindy used trade books for reading instruction, she asked comprehension questions that required use of strategies she had taught. If she wanted them to use a look back for example, she asked a question and then had the students tell where they found the answer. Often she had students provide evidence for their responses. She also created and implemented vocabulary assessments to determine students' progress. Cindy came to understand that waiting until the end of the year to determine what students learned was too late.

Thus, Martha and Cindy adopted assessment strategies with which they could determine student growth in developing reading and math skills.

With these data, Cindy and Martha identified skills that required increased practice and peer work.

Individualized Instructional Framework

Even before she joined the TLC, Diane constantly worked to refine her practices. She determined when instruction was not going well, made adjustments, and reflected about student learning. She acknowledged problems and revised her procedures or strategies. Diane was constantly changing. She continued to go to workshops, read about curriculum resources, and attempted innovations learned through the TLC. She could not be characterized as making a major change as a result of a specific influence. She just continued to evolve as a result of many different influences. Diane may be characterized by her ability to (a) refine her thinking about instruction, (b) provide more explicit instruction, and (c) use more resources to increase individual academic support.

Refining instruction. I worked with Diane on three occasions with center instruction. All three times procedures were different as a result of problems that Diane identified. Initially, Diane set up four centers. However in 75 minutes, it was impossible to have students rotate through all four. The second time, she brought in more adult support and trained students previously to use the computer center. Still, the students did not have enough time at all the centers. She then found a routine that worked and used it until the end of the year. Diane created more centers and incorporated them on a daily basis. All students were to work at one center a day until they rotated to all of the centers over a period of several weeks.

Provide more explicit instruction. What was most remarkable about Diane was how she continued to improve upon her previous instruction by making instruction more explicit. One morning after an observation, one of the TLC researchers was questioning Diane about a practice she observed in her room. Diane was having students work individually on reading comprehension activities that involved reading a short expository text and answering questions about it. When the researcher questioned her about the purpose of this activity, Diane replied that she used it to help organize and focus students when they came into the room. The researcher suggested that Diane use this activity to teach summarization, and they discussed ways to accomplish this. Diane rethought her work and the morning activity to help practice important skills and strategies. Later, I asked Diane to describe this morning work process. Diane said she tries to model for her students the processes they can use to aid them in understanding information from the text. She will think aloud for the students about how to use the strategy. For example, she may draw a semantic map or use webbing and talk through the process. She has the students summarize the paragraph in one word (sometimes two or three). She tells the students, "Give me one word that could be used to tell what this paragraph is about." She has the students repeat this procedure for the remaining three or four paragraphs. Diane has her students answer the comprehension questions and then go back in the text and underline where they found the information. The last thing they do is make predictions about what tomorrow's story will be about based on the five vocabulary words given and the pictures that are shown.

Use resources to increase individual academic support. Because of Diane's ability to assess her work and her students' progress, she recognized the need for remedial resources to provide some students with intensive practice. Diane learned about remedial programs through workshops, TLC meetings, the reflective friend, and curriculum resources. When she learned about resources for struggling students, she took several steps to make sure she could use them. She implemented remedial strategies during instructional time, met with students after school, had an aide pull students aside during noninstructional time, and assigned students to tutors. For instance, after learning about Great Leaps, she was eager to use it and had her aide trained to do so. Diane targeted at least five students in her two reading classes she was teaching in year 2. The aide pulled the targeted students for 5 to 10 minutes four times a week. The aide kept running records on student reading, and Diane used the data to determine students' progress. Diane also increased practice opportunities for students by using CWPT, working with peers in groups, and using school volunteers as tutors.

Diane had a well-developed teaching method and refined her current practices continuously. She rethought her use of morning work and created learning activities that explicitly taught the reading strategies she was teaching during the day. Diane quickly recognized students in trouble and could make adjustments in her instruction to accommodate them. For students who needed intensive remediation, she found resources that either she or others used. Diane used running records to determine student progress. She attempted to provide remediation within her classroom but, when necessary, also used pull-out tutoring models. Diane was so reflective

that she would often tell observers after a lesson what went wrong, and she was consistently on target. Diane was never satisfied; she always saw places for improvement and ways to facilitate the learning of her students.

Summary

The TLC served as a forum where teachers could have discussions with colleagues and researchers about problems in their class and their instructions. The TLC provided teachers with new ideas to try with their students. In spite of the helpful ideas provided by some of their colleagues, teachers relied on the researchers to share information and provide leadership to the group. Teachers did not share beliefs about students and learning and often time had trouble agreeing on effective practices. Teachers had limited time to develop group cohesiveness as a result of the TLC being an added responsibility.

TLC teachers liked having access to the reflective friend. Initially, the reflective friend acted as an aide to gain the teachers' trust and confidence. As the relationship developed, the reflective friend acted as a teaching coach and partner, research interpreter, and promoted teachers' reflection, problem solving, and efficacy. Over time, the reflective friend encountered two issues that needed to be resolved. First, it was difficult to know where to begin helping teachers who had dramatically different beliefs about students and instruction. Second, there was a fine line in helping teachers reconsider their view about students and still remaining a support to the teacher.

All teachers made changes in their practices. Teachers with more standard views of instruction were able to implement more student-centered instruction, use alternative instructional groupings, and considered the use of

more refined instructional instruments. As teachers changed their practices, students became more excited about instruction, which in turn motivated teachers continued use of new practices. Diane, who was individualized in her instruction, continued to refine her thinking about instruction. Through her fine-tuning, she used more explicit instruction to teach strategies and used resources to provide individualized academic support to students.

CHAPTER 6

CONCLUSIONS AND IMPLICATIONS

The purpose of this study was to determine if general education teachers collaborating with university researchers could change their practices to include students with academic and behavior problems. This study further explored the roles of teachers' context, the collaborative group, and the outsider in hindering or facilitating that change. Teachers met with university researchers for 2-1/2 years in monthly collaborative group meetings to discuss problems of practice and generate solutions to those problems. Teachers also worked for 2 years with one university researcher who acted as an observer and provided feedback, a role I refer to as the reflective friend. The reflective friend assisted teachers individually in developing inclusive practices that were appropriate to their needs and compatible with their teaching framework.

The following chapter provides a summary of the findings and how those findings relate to previous research on teacher change. I conclude with discussions of how the findings might be used with researchers and practitioners.

Findings

Four general education teachers were the focus of this study: Kay, Diane, Martha, and Cindy. They all worked at Hidden View Elementary, an average-sized elementary school in a large urban district. Hidden View was

designated as an REI school where all students with mild learning disabilities and emotional handicaps were fully included in general education classrooms. All four teachers volunteered to participate in the TLC for all 2-1/2 years and worked with the reflective friend for 2 years. These teachers understood that through collaborating with university researchers they would discuss problems of practice and develop solutions to those problems.

To describe the teachers' development of inclusive practices, I observed in their classrooms for a total of 327 hours over 2-1/2 years. Researchers and I conducted four interviews with them and I maintained minutes at 126 hours of meetings and workshops conducted during the study. I collected data on teachers' development of inclusive practices and the facilitators and inhibitors of the change process. The data were analyzed using procedures described by Merriam (1998) and Miles and Huberman (1984). First, data were coded and organized into categories of similar events. Categories were used to develop patterns and themes relating to the broader idea of the category. Through constructing and reconstructing patterns, themes emerged across participants to describe their development of inclusive practices. Looking across participants, themes and patterns emerged to describe the role of school context, the classroom context, teachers' cognitive context, the role of the TLC, and the role of the reflective friend in the development process.

The Role of School Context

Hidden View could be described as a typical elementary school. The four teachers considered their school administrator to be supportive. They described Ms. Summerlin as providing resources and support for them to

improve upon their practices. Additionally, teachers thought Ms. Summerlin shared power with them. The school faculty was congenial; teachers casually interacted with one another in a friendly manner. However, teachers knew little about each other's teaching practices and students. They had no opportunities to meet with each other during the day.

Teachers also felt pressured by the district and state to improve their students' performance on standardized tests. They participated in workshops and received materials that helped prepare students for assessments. Although Hidden View was considered an REI school, students with more significant learning disabilities or behavior problems, mild mental retardation, severe disabilities, or physical disabilities were served at other schools. Hidden View had four self-contained classrooms for students with moderate mental retardation. Only students with disabilities who needed minimal support in general education classrooms were served in REI classrooms.

Classroom Context

The teachers' classroom contexts influenced their practices to varying degrees. In year 2, Hidden View adopted a new reading curriculum that was very different than the previous curriculum. In spite of inservice provided by the district, teachers did not understand how to implement the reading strategies in a meaningful way. The curriculum offered many extra resources, but teachers had difficulty determining what to use with their students. Teachers also had a standard view of curriculum that was reinforced by district and state assessments. With the pressure from the district to improve students' test scores, teachers wanted resources that would guarantee

improved scores. Teachers were told the reading curriculum covered concepts for assessments; as a result, they relied on the text for all reading instruction. Often teachers did not want to learn about innovations until assessments were over. If innovations did not guarantee improvement on test scores, teachers were not motivated to implement them. Additionally, the diversity of learning problems within each teacher's classroom presented challenges. Students with complex learning problems who needed more than minimal accommodations caused teachers to question the value of inclusion. Teachers experienced an even greater dilemma when determining how to assist students with learning problems who did not qualify for special education. They did not know if they could accommodate students who were not labeled ESE.

Teachers' Cognitive Context

Each teacher's framework influenced the depth and the breadth of the changes made. Kay, Martha, and Cindy were characterized as having a standardized approach to instruction. These teachers typically relied on whole group, undifferentiated instruction. They taught all students at the same time in the same way. With exception of Kay, teachers made few to no accommodations for students who needed additional assistance to be successful. Teachers using a standardized approach were also characterized by their teaching of content over mastery. They moved quickly through the curriculum to expose their students to all content in the grade level curriculum. Teachers emphasized exposure to content and often neglected to teach for mastery.

Diane was the clear exception. She was individualized in her approach to teaching. She used student-centered instruction when introducing new concepts. Students participated in discovery lessons, learning centers, reenactments, and field trips to assist them in developing understanding. Additionally, Diane used multiple instructional arrangements and strategies to promote self-management and positive behavior. She created opportunities for students to work in pairs, small groups, or independently. Diane modeled, taught, and reinforced the use of specific strategies for reading, problem solving, and managing behavior. Diane also varied accommodations based on students' individual needs. She tutored students individually or in small groups, provided remedial instruction, or found outside tutoring for students.

The Role of the TLC

The TLC provided teachers support in changing their practices. Teachers were provided with a forum for discussion, which allowed them to experience a structured process for problem solving and questioning their beliefs and practices. Teachers used action plans, a contract with them and the group, as a tool to specify their action in solving a particular problem. All teachers by year 3 were able to write and successfully implement their action plans with minimal support. Teachers did, however, continue to share their plans and get advice as needed through the TLC meetings. The TLC also enabled researchers to question teachers' beliefs and offered teachers an opportunity to question each other. Most often, researchers questioned teachers about instructional and managerial practices and how they benefited students. As the group became accustomed to talking about difficult topics, they began to question school-wide practices and, on occasion, their

own practices. One teacher began to question her grade level colleagues about how their practices helped students with learning problems. The TLC also provided teachers access to resources. Researchers shared innovations they thought teachers would be inclined to implement. As teachers developed an innovation and became proficient in its use, they shared it with TLC colleagues and non-TLC colleagues. The TLC served as a vehicle for teachers and researchers to share ideas for improving student learning.

Issues to Resolve in the TLC Process

Although the TLC provided teachers a source of support, three issues affected the functioning of the group. Even though we explained to teachers our desire to achieve a collaborative partnership among the teachers that could sustain itself, teachers became dependent on researchers. Teachers relied on the researchers to set, organize, and lead all TLC meetings. Teachers had limited planning time and it did not coincide with their TLC colleagues' planning time. They needed an outside person to negotiate with each of the participants and principal in determining times to meet. As this dependency on researchers developed, teachers continued to listen to our suggestions but rarely valued their colleagues' ideas. Again, teachers had limited time in their day to observe or meet with their colleagues and neither were they encouraged to do so. Even when a colleague shared assessment data on improved reading scores, teachers still did not incorporate their colleague's idea. On some occasions, teachers made negative comments about each other's practices and commitment. Besides, because TLC was an added responsibility, teachers had to meet after school or miss a day of school to attend meetings and workshops. Collaboration was not expected in their

environment, and teachers had to make sacrifices to attend meetings. The isolated context in which teachers worked limited them seeing innovative practice or different forms of instruction used by their colleagues. They additionally had limited incentive to engage in new practices.

The Role of the Reflective Friend

The reflective friend also served as a support to teachers. As the reflective friend role developed over time, I served in different capacities to assist teachers with change. Initially, I assessed students and acted as a teacher's aide as a way to gain their trust and confidence. Teachers were uncomfortable with my presence and note taking in their classrooms. As I became more involved in helping them and their students, we established a trusting relationship. Once teachers viewed me as a colleague and a source of personal support, I was able to act as a teaching partner and coach. The more standardized the teacher was in her practices, the more coaching I had to do. The more individualized the teacher, the more I was able to act as a teaching partner. Often I served as a research interpreter. Once teachers learned about innovations in the TLC, I helped them apply the innovation to their specific context. I highlighted points that were relevant to them and assisted them in writing action plans that implemented innovations and strategies. Through working with teachers closely, I had opportunities to promote teacher reflection, problem solving, and efficacy. I served in varied and complex roles when working with the teachers. My roles often depended on the specific need of the teacher and the relationship we had established.

Issues to Resolve in the Reflective Friend's Role

While building relationships with each of the teachers, it was difficult for me to know how to help some of the teachers because we did not share common beliefs about teaching and learning. I had to learn how to work with them so we could build trust. I had to find small ways to help them and find innovations that were compatible with their teaching framework. I had to help them target problems I thought would have a reasonable success rate and then develop solutions that I thought they would be committed to using. The other issue that was difficult to address was helping teachers reconsider their views of students. When students presented challenging problems, teachers were quick to suggest the child be tested or placed in a self-contained special education classroom. I knew that in many cases teachers' instruction was part of the problem. It was difficult to know when to advocate for the student and still maintain my support for the teacher. On some occasions, teachers encountered a very challenging student who was academically below other students in the classroom. Given the constraints in the school context and limited sources of support, it was hard to advocate for including students with challenging learning and behavior problems.

Changes in Practices

All the teachers made changes in their practices to varying degrees. The teachers' framework for teaching influenced the changes they were able to make. Teachers who operated from a standardized approach to instruction were able to move toward student-centered instruction. After participating in the TLC, one teacher allowed students to use manipulatives to draw their own conclusions and reinforce conceptual understanding. In some cases,

teachers varied graded assignments to include oral and created products instead of written assessments. They used alternative instructional groupings, such as peer-mediated instruction and cooperative learning. Teachers slowly adjusted to the noise increase and allowed students to work together to complete assignments for grades. As students became more engaged in their learning and classroom behavior improved, teachers were reinforced to continue to use the innovation. Toward the end of the third year, teachers considered the use of refined assessment instruments. On occasion, teachers used minute timings and teacher-made assessments to determine student growth.

One teacher was individualized in her teaching approach. Diane was constantly revising her practices to improve student learning. She was not satisfied with methods, routines, or materials during instruction until students were successful with the learning experience. Diane was able to determine when instruction was not going well and then reflected on her practices until she found another approach that worked. Diane also used more directed remediation resources to assist individual students who experienced learning problems. She implemented a remedial reading program within her current reading instruction, tutored students after school using a phonics-based tutoring program, or had her aide implement a tutorial program that emphasized phonics, sight words, and repeated reading. Diane was able to refine her practices and implement remedial resources with her students. It was Diane's continued state of improvement that facilitated her ability to incorporate innovations easily. For all teachers, change was dependent on the desire, needs, and knowledge of the individual teacher. All

four teachers were able to make changes; they were, at best, modest. Often these changes were difficult for teachers to implement. Teachers needed considerable assistance and time to change their practices.

Relationship of Findings to Previous Studies

Researchers working with general education teachers to assist them in developing inclusive practices have noted the complexity of the change process (Boudah et al., 1997; Vaughn et al., 1998). Many factors can facilitate or inhibit change in schools (Englert & Tarrant, 1995; Peterson et al., 1996; Vaughn et al., 1998; Wasley et al., 1997; Westheimer, 1998). Facilitators and inhibitors of change influenced Kay's, Diane's, Martha's, and Cindy's change in practices.

Facilitators to Change

As a result of aspects in the school context, teachers' cognitive context, the TLC, and the reflective friend, teachers were facilitated in making changes. Specific factors in the school context that assisted teachers in changing were the supportive administrator and the REI model. Ms. Summerlin supported teachers in improving their practices through power sharing and providing resources to her teachers. She supported teachers in their self-initiated attempts to improve instruction. She additionally provided them periodic release during the school day for professional development activities. Good principals described in the literature also share leadership roles with their teachers and support them in developing professionally (DuFour, 1997; Peterson et al., 1996; Westheimer, 1998). Peterson and colleagues (1996) and Westheimer (1998) further described power sharing in efforts that allowed school personnel to build consensus on how teaching and

learning would be envisioned in their schools. This level of power sharing was not present at Hidden View. Hidden View's designation as an REI school provided a policy for inclusion. This policy could have been the beginning of vision building as previously described in the literature (Peterson et al., 1996; Rosenholtz, 1989; Wasley, Hampel, & Clark, 1997; Westheimer, 1998), however, little discussion occurred between teachers and administrator on the extent to which inclusive education would be provided. Teachers did volunteer to be REI teachers and were at least minimally supportive of inclusion for students with mild disabilities.

Much of the literature that describes teachers' practices addresses teachers who are more standardized in their approach to instruction (Boudah et al., 1997; Carter, 1995; Jones, 1997; Martin, 1995; Meichtry, 1990; Peterson et al., 1996; Richardson & Anders, 1994; Wood et al., 1991). What is not described in the literature are teachers who develop inclusive practices and are individualized in their teaching framework. Diane was quick to change and often considered individual needs of her students by her use of student-centered instruction, multiple instructional arrangements, and varied accommodations. In previous studies of general education teachers working with diverse students, researchers indicated that, with support, teachers were able to develop innovative practices (Boudah et al., 1997; Richardson & Anders, 1994; Vaughn et al., 1998; Wood et al., 1991). Teachers with an individualized view of learning hold potential to readily adapt innovations and consistently use them over time, resulting in more effective instruction for all students.

In the literature, collaboration played an important role in helping teachers change. Even though teachers at Hidden View were isolated, they did have the opportunity to participate in the TLC. Through the TLC, teachers had a forum for discussion using a structured process for problem solving and questioning of beliefs. A well-documented benefit of collaboration is problem solving and reflecting with researchers and colleagues on problems of practices (Boudah et al., 1997; Richardson & Anders, 1994; Vaughn et al., 1998; Wood et al., 1991). All four teachers shared problems of practice with the group, generated action plans to solve their specific problem, and by year 3, experienced success in solving the problem they identified.

The findings also support the need for teachers to have an outside perspective to assist them in reflecting and solving problems of practice (Senge, 1990). My role as the reflective friend depended on the needs of the teacher. Only a few studies have described the process of researchers working individually with teachers (Boudah et al., 1997; Courtland & Welsh, 1990; Englert & Tarrant, 1995; Richardson & Anders, 1994; Vaughn et al., 1998; Wood et al., 1991; Woolsey, 1991). Researchers agree that developing trusting relationships is essential, however, little is known about how to gain teachers' trust and confidence. On some occasions, researchers have described their roles as coach or teaching partner (Courtland & Welsh, 1990; Englert & Tarrant, 1995; Vaughn et al., 1998). These researchers provided support to teachers through demonstration lessons in their classrooms, coaching them through new practices, and providing them with feedback. On rarer occasions, researchers have described the need to interpret the research

for teachers (Gersten et al., 1995; Gersten & Woodward, 1990). In most cases, researchers assume their role is to bring the research to teachers and present it. By presenting teacher friendly research, researchers may act as an interpreter. However, in working with Hidden View teachers, I interpreted research for their individual needs and assisted them in devising plans for implementing that research in their classroom. These actions assisted teachers in applying new practices in their personal context, and therefore, teachers were more likely to continue innovation use (Briscoe & Peters, 1997; Gersten et al., 1995; O'Connor et al., 1992; Vaughn et al., 1998). Rarely do researchers describe working closely and individually with teachers; when they do, little is known about the depth of their interactions (Englert & Tarrant, 1995; Vaughn et al., 1998). Finally, researchers working with teachers often described their role in assisting teachers in promoting reflection, problem solving, and efficacy (Boudah et al., 1997; Courtland & Welsh, 1990; Englert & Tarrant, 1995; Hunsaker & Johnston, 1992; Richardson & Anders, 1994; Vaughn et al., 1998; Wood et al., 1991; Woolsey, 1991). As a part of the TLC and especially in working individually with the reflective friend, all four teachers demonstrated an increase in reflection, problem solving, and efficacy.

Inhibitors to Change

Aspects in the school context, classroom context, teachers' cognitive context, and some of their views of collaboration inhibited teachers in changing their practices. Specific factors in the school context that limited teachers in changing were the isolated context, pressure of testing, and lack of common vision. Hidden View was a typical elementary school where

teachers worked in an isolated environment. The faculty knew little about each other's classrooms, and was at best, congenial to one another. The isolation in schools has previously been reported as a barrier to change and innovation (Hargreaves 1994a, 1994b). Teachers lacked the time and opportunity for face to face interaction that typically has been described as promoting trust and support in the change process (Carter, 1995; da Costa & Riordan, 1996; Jones, 1997; Torres, 1996). Hidden View's teachers rarely had opportunity to collaborate together and had low levels of support and trust for each other. On some occasions, teachers criticized their colleagues' practices in spite of never seeing them teach.

As previously cited in the literature, teachers feel pressure to improve students' state assessment scores and will often abandon innovative practices if they do not understand how the innovation directly affects test scores (Vaughn et al., 1998; Wilson, 1990). Teachers view a call for improved assessment scores and a call for innovation as incompatible and will revert to their traditional practices when in doubt of innovation (Tillema, 1995). Diane, Cindy, and Martha all discussed the importance of preparing their students for state assessments and often wanted to learn techniques that would guarantee improvement. If teachers doubted the innovation and its ability to improve scores, they did not want to implement it and resisted efforts to change their mind.

Lack of common vision greatly inhibited collaboration and the development of powerful innovations. Even though Ms. Summerlin supported teachers in improving their practices, her support was not enough to create an environment that stimulated change. Previous literature described the

need for principals to be committed to teacher development through vision building, creating an expectation for learning, and fostering collaboration in addition to sharing power (DuFour, 1997; Fullan, 1999; Peterson et al., 1996; Westheimer, 1998). Through teachers working together for extended periods of time, they develop a trusting supportive community (Carter, 1995; da Costa & Riordan, 1996; Jones, 1997; Lipman, 1997; McIntyre & Kyle, 1995; Oja et al., 1995; Torres, 1996). No faculty discussions occurred about their expectations and beliefs about students and learning. Even with Hidden View's designation as an REI school, teachers were not provided with an understanding about inclusion and how that would affect all their students. Teachers maintained their own beliefs about inclusion and accommodations, and often those were incompatible with the REI model. Most teachers and the principal were only partially supportive of inclusion; only students who needed minimal accommodations were included.

Classroom context also acted as an inhibitor to teacher change through the use of an overwhelming curriculum and the diversity of students. Teachers learning about a new curriculum can often be confused about how to implement it in ways that benefit students. In previous work describing teachers' learning to use a new math curriculum that emphasized strategies and effective practices, researchers found that teachers used the curriculum in their traditional ways, not enacting the curriculum as intended (Martens, 1992; Wilson, 1990). Even with staff development on effective implementation, teachers revert to their traditional teaching habits (Tillema, 1995). School districts' adoption of curriculum that emphasizes state-tested content only reinforces teacher dependence to teach all that is offered in a

new curriculum (Vaughn et al., 1998; Wilson 1990). Diverse student learning problems, another factor in the classroom context, have consistently posed problems for teachers (Lipman, 1997; O'Connor et al., 1992). The more complex the problem, the more ill prepared teachers feel they are to include students (Vaughn et al., 1996). Previous research on general education teachers including students with disabilities supports the finding that teachers judge successful cases for inclusion by students fitting in with their nondisabled peers and needing little accommodation (Baker & Zigmond, 1995). All four teachers considered referral to special education or encouraged a self-contained special education placement for students who presented them more difficult challenges.

Teachers' cognitive context was another inhibitor to the change process. Teachers characterized as standardized in their practices typically were the focus of researchers working with general education teachers to learn innovations. Researchers described these teachers as relying on whole group, undifferentiated instruction (Baker & Zigmond, 1995; Schumm & Vaughn, 1995; Zigmond & Baker, 1990). Additionally, researchers have found that general education teachers emphasize covering content over teaching for mastery (Baker & Zigmond, 1990; Pugach & Warger, 1996). In fact, researchers described their struggle to move teachers away from standardized approaches (Boudah et al., 1997; Courtland & Welsh, 1990; Etchberger & Shaw, 1992; Hunsaker & Johnston, 1992; Martens, 1992). Kay, Martha, and Cindy were all standardized in their approach to teaching. Their view of instruction limited the type of innovations they were willing to learn; and they required more substantial assistance to implement them than

Diane, who operated from an individualized framework. Teachers with a standardized view of instruction take longer to make changes and often the change is not that substantial.

The teachers had some views of collaboration that acted as an inhibitor to change. The problems experienced at Hidden View of deferring to researchers and lack of time to collaborate were not uncommon. Previous studies had indicated that teachers have a tendency to defer to researchers as experts (Englert & Tarrant, 1995; Hunsaker & Johnston, 1992; Jones, 1997; Vaughn et al., 1998). Researchers have cautioned others who work with teachers to find ways the group can contribute to each other's learning (Englert & Tarrant, 1995). However, researchers have found that even when teachers indicate they want to learn about a new idea from their colleague that rarely do they follow through (Briscoe & Peters, 1997). Briscoe and Peters concluded that lack of follow through was a result of incompatible teaching approaches between the two teachers. When Diane shared about her implementation of the remedial reading program and showed data of student improvement, only one teacher indicated interest in implementing the program in her reading routine. After Diane attempted to assist this teacher in implementing the program, the teacher indicated she was unwilling to change her current routine. Perhaps the lack of trust for a colleague's knowledge was the greater issue. Building trust and support had previously been cited as facilitators for teachers learning from one another (da Costa & Riordan, 1996; Jones, 1997; Martin, 1995; Meichtry, 1990). Teachers acknowledged Diane as a hard working teacher; however, they looked to the university researchers as the instructional experts.

The TLC as an added responsibility did not help teachers in viewing the importance of developing collaborative relationships. As previously found, teachers need a supportive context that allows for opportunities within the school day for teachers to meet to develop trust and support (Briscoe & Peters, 1997; Peterson et al., 1996; Westheimer, 1998). Meeting once a month as an added responsibility did not allow teachers the time needed to develop a common purpose through collaboration. Collaboration was viewed as one more task as opposed to a vehicle for improving their work. Teachers were not required to engage in professional development, nor were they encouraged to do so. Ms. Summerlin provided an occasional perk, such as an hour long lunch for TLC participants, but that perk did not match the hours of planning teachers had to do to prepare for a substitute teacher. Most of the time, teachers were expected to meet after school on their own time.

Use of Findings to Research Community and Practitioners

This study may be of use to researchers and practitioners who work with teachers to create more inclusive environments. Previous literature indicated that essential elements for effective professional development included practicality of the innovation, demonstration of and feedback about the innovation, collaboration as a means for teacher development, and personal qualities of teachers. From the onset of this research study, all four elements were considered important components in the TLC project. Researchers selected innovations that were considered teacher-friendly and practical to the teacher. All innovations suggested to the teachers required small adjustments to their teaching routines. Teachers had individual assistance through demonstration and feedback in working with the

reflective friend. An outsider provided ongoing assistance in many forms, provided tailored innovations to individual teachers, and gave feedback on individual progress. In addition to individual attention, teachers collaborated with colleagues who were engaged in the same learning process. All teachers were to work toward an action plan to solve a problem of practice. Finally, teachers volunteered to participate in the TLC, which indicated their desire to change. Only teachers who worked on action plans stayed in the group. In spite of carefully creating professional development that included all the essential features described in the literature, four teachers made minimal changes in 2-1/2 years. These findings inform research and professional development through lessons about context, collaboration, and cost.

School and classroom context have been noted in the literature as being critical to providing teachers a climate of support for learning and risk taking (DuFour, 1997; Fullan, 1991; Nias et al., 1992). Researchers and practitioners will need to assess and understand the school climate to determine the types of changes that will likely occur. A supportive principal who lacks vision and facilitative leadership will not be able to support teachers in making substantial change. Teachers need a strong leader that shares power with them by developing a vision for all students. Through leadership, a principal sets the example of learning and works toward personal change. Principals should expect that all teachers work on improving their teaching with change being the norm. Also, being designated as an inclusion school does not mean that the teachers support inclusion or know how to provide inclusive education. School personnel require extensive conversation about how to deliver quality instruction while meeting the

diverse needs of students. Teachers need time and structures that allow them to collaborate with their peers to get support for including challenging students and solving problems of practice. Principals need assistance to create innovative structures that allow teachers to work with one another.

Next, teachers need a forum where they can discuss their problems of practice and question each other about their beliefs on teaching and learning. However, discussions alone do not help them solve their problems; teachers need to talk with someone who is familiar with them and their students. An outside perspective has been noted to challenge teachers in their thinking and provide new ideas (Courtland & Welsh, 1990; Wood et al., 1991). Researchers and practitioners should determine ways to feasibly include a knowledgeable outsider in collaborative learning opportunities. In individual collaborations with peers and outsiders, teachers have benefited from modeling, coaching, observation, and feedback in the context of their own classrooms. Even when all of these opportunities are present, change is still uncertain, time consuming, and complex. Researchers and practitioners should consider ways to create opportunities for teachers to assist each other in developing new practices. Rarely are teachers prepared to observe and provide feedback to their own peers. New opportunities need to be created that assist teachers in learning how to become reflective friends to their colleagues. Teachers have an advantage over an outsider by their continued presence at the school, familiarity with the school and policies, and personal interactions with students and teachers. Traditionally, the literature has reported teachers' discomfort with providing evaluative feedback to their peers (Costa & Kallick, 1993; Kohler et al., 1995; Stein & Wang, 1988).

Researchers and practitioners should consider ways to help teachers work through their discomfort with peer feedback and help teachers view feedback as an ongoing opportunity for improvement. When collaboration becomes the norm and teachers are providing the leadership for those groups, discomfort should reduce when working directly with peers. Teacher leadership in collaboration is critical for its sustainability. Teachers have to be valued partners who create a vehicle appropriate for their learning. Researchers and practitioners need to help schools develop structures for collaboration during the school day, assist teachers in helping their peers improve instruction, and work with teachers to develop leadership skills to facilitate collaborative groups.

Finally, researchers and practitioners need to determine if the results of working intensely in schools justify the investment made. Only four teachers consistently participated in the TLC for 2-1/2 years. New joiners were added in year 3, but after each year, people dropped from the group. Hardly can collaboration be sustained with a small pocket of teachers in an environment that does not embrace it. It is important to assess the magnitude of the potential task and determine the potential benefit received. Thousands of dollars in university and federal grants funded other researchers and my work at Hidden View. In 2-1/2 years, four teachers valued collaboration, learned a couple new practices, and made some changes in their instruction. Potentially, a pocket full of students' learning may be impacted by the instructional changes these teachers made. A few of Hidden View's teachers have heard about some of the innovations TLC teachers have tried, yet only a few teachers are curious enough to join the TLC. Researchers

and practitioners should count the cost to determine if the investment they make through time and money will yield a return to match the investment.

APPENDIX A
TABLE OF TEACHER CHANGE STUDIES

Table A-1. Description of Participants, Methods, and Findings from Reviewed Studies

Author's Name	Participants	Methodology	Findings
1. Boudah, D.J., Deshler, D.D., Schumaker, J.B., Lenz, B.K., & Cook, B. (1997)	1 6th grade teacher	2yr. case study interviews, Obser- vations, Meetings with researchers	Attention to sub groups and individuals; Individualized instruction and assessment; Added modeling to her instruction; Continued to be detailed and concerned about prior knowledge; Greatest change was moving from being content-centered to student-centered
2. Briscoe, C., & Peters, J. (1997)	24 teachers from 13 schools, 2 science ed. Professors, 2 GRAs	Case study, structured interviews, discussions, Observations, field notes, meetings	Most teachers were willing to try the problem centered approach to science instruction. Some teachers used the approach in various activities as others based their whole unit or curricula around the approach. Increased student engagement and collaboration among the teachers aided the use of the approach. Brainstorming was important for the teachers to improve their content and pedagogical knowledge. Knowing that other teachers were trying the new approach made it easier for them to take risks. Teachers used each other as resources during implementation. Even after collaborating with a successful teacher, some teachers still find it difficult to change from a teacher control approach to a student centered approach. Meetings encouraged reflection and the continued use of the new approach. Some teachers dropped out because they did not see the need to change and others wanted inservice credit. Commitment to change and a supportive environment are just as important as collaboration in making lasting change.
3. Carter, C. (1996)	2 teams of 4 high school teachers	Case study, Participant observation, Interviews, Classroom observations	Students and teachers in a community pod. Teachers felt they could exert more authority. Ability to make changes in such areas as curriculum, schedules, and grades. Received encouragement, and, allowed a great amount of support among the teachers. Increase in opportunity for reflection. Teacher felt a greater sense of control over the educational outcomes of the students.

Table A-1--continued.

Author's Name	Participants	Methodology	Findings
4. Courtland, M. C., & Welsh, R. (1990)	1 male teacher, grade 4/5 class, 1 st grade	observation, interviews, document analysis	Year one: The teacher did not know exactly what he needed to change. Outside supporters recommended that he develop a plan to engage in active problem solving and reflection. Year two: As students improved their writing skills, the teacher had an increased commitment in fully implementing the writing process approach. He still, however, was scared to share this approach with the student's parents for fear of criticism of his untraditional approach. To become better at this approach, it was suggested to the teacher that he focus on his students' individual needs. Year three: The teacher did not think it was his job to address individual needs and increased the use of student groups. He led weekly meetings with other teachers and was viewed as an expert on the approach.
5. da Costa, J.L. (1993)	26 teaching partners, 2 suburban schools	Quantitative, pre/posttest design, Individualized trust Scale, Supervisory Beliefs Inventory, Reflective Index, Teacher Efficacy Scale, Our Class and Its Work, Pupil Report cards, School Attitude Scales for Children	Teachers in the CC group exhibited higher levels of personal teaching efficacy while pupils in this group had higher achievement. The CCNO group teachers exhibited the lowest personal teaching efficacy. The CC and CCTT group were most likely to have higher personal teaching efficacy and the pupils with higher achievement. Trust for the teaching partner and the teaching partner's preferred mode of interaction were not found to be related to teacher efficacy and teacher reflection.

Table A-1-continued.

Author's Name	Participants	Methodology	Findings
6. da Costa, J.L., & Riordan, G. (1996)	10 teachers 5 dyads, 3 elementary schools between dyads, 4 meetings	Semi-structured interviews, Audio taped conferences	Self selection versus administrative assignment of dyads: Building trust was slower in schools where dyads were mandated. Selecting the focus of the collaborative consultation cycle: easier to share ideas after having collaborated four or five months. Teacher confidence: teachers with high levels of teaching efficacy are more likely to engage in trusting relationships. Trusting relationships where teacher confidence was high, discussions of pedagogy were not limited to pre/post conferences but happened at different times.
7. Engert, C.S., & Tarrant, K.L. (1995)	4 Sp. Ed. teachers, University Researchers	Qualitative interviews, Observations, meetings	There was great variation in knowledge constructed in the group. Teachers learned best in areas where they had the greatest needs and interests. Greatest change occurred when the members of the community came to share the theoretical framework and goals. Created a place to share instructional results. Increased self-efficacy and student expectation.
8. Eichberger, M.L., & Shaw, K.L. (1992)	1 5 th grade teacher	Case study, Observations, Interviews, Journal entries	Teacher taught science in cooperative groups, mathematics in a traditional approach. The teacher did not see how cooperative group learning could work in mathematics. First stage: instrumental teacher-dispenser, individual student-receiver ... time constraints need for children to understand concepts ... teacher's job to dispense knowledge. Second stage: instrumental teacher-dispenser, cooperative student-receivers. ... students allowed to aid each other in completing teacher-instructed, teacher assigned tasks. Third stage: relational teacher-provider, cooperative student-constructors ... teacher provider of situations from which learners derive or build concepts.
9. Fuchs, L.S., Fuchs, D., Hamlett, C.L., Phillips, N., & Karns, K. (1995)	20 teachers 2 treatments	Interviews, Teacher planning, questionnaire, CBM assessments	More teachers relied on adaptations. Reported more modifications in goals and teaching strategies with students with LD. Teachers relied on CBM to inform instruction. Teachers reteught lessons for students with LD. Teachers deviated from teacher's manual when planning for students with LD.

Table A-1—continued.

Author's Name	Participants	Methodology	Findings
10. Gersten, R., Morvant, M., & Brengeiman, S. (1995)	12 classroom teachers, 2 spec. ed. coaches	Audiotaped teacher/ coach meetings, Field notes	Up-and-down nature of change, Differences in perspectives: Teachers felt evaluated and anxious, Differences in conceptions of teaching: Students with learning disabilities are one concern among many for classroom teachers, Shifts in teachers' perceptions: more specificity, more responsibility, more understanding of students' needs
11. Hunsaker, L., & Johnston, M. (1992)	1 researcher 1 1st grade teacher	4yr. longitudinal case study, Field notes, Researcher report	In the beginning: dependency on researcher for knowledge, relied on unreflective approach to teaching, little motivation for critical re- flection and change. At the end: "Becoming the experimenter". Tried new instructional activities, Experimented with reading/writing, Difficulty giving up control, Eventually asked her own questions and sought her own answers, Other people provided ideas and support
12. Jones, B.M. (1997)	1 urban school, 4 school personnel, principal, researcher, 9 teachers	Case study, Observations of audiotaped meetings, Field notes	At the onset, groups looked to the facilitator to play the expert role and provide the information. By the end of the year, the leadership role shifted to a third grade teacher. Share expertise, supported colleagues, reflected own practices.

Table A-1--continued.

Author's Name	Participants	Methodology	Findings
13. Kohler, Frank W., McCullough, Kerry M., & Buchan, Kristin A. (1995)	2 female preschool teachers, 2 female pre-school aides, 2 preschool classrooms, 2 groups of 12 students	3 one hour meetings, videotaped activities, observation, interrater agreement, assessment	When asked what they felt about the project, all four teachers seemed to express some anxiety about being watched by another teacher, time constraints, or having to find something wrong with someone else's practice. All four teachers made some sort of procedural refinements which varied from teacher to teacher. Three of the teachers made changes during coaching except for one who remained the same throughout. Changes are more likely to occur under collaboration than if a teacher is working independently; these changes can be continued over time. Changes in teaching activities caused changes and improvement in student reaction. Teachers wrote more suggestions for change during the coaching phase, not the independent phases. The teacher who expressed the most discomfort with coaching instituted the fewest changes. Teachers may need a great amount of time to adjust to change.
14. Lipman, P. (1997).	2 groups of 5 9 th grade teachers	Case study, Observations of meetings	Collaborative team meetings were dominated by [four themes:] 1. Focus on individual students, identify problem students. Collaboration created a context in which teachers could identify perceived weaknesses of the kids and be reassured that their own practice was not at fault. 2. Competitions and rewards--creating incentives for Good behavior and academic achievement. 3. Social control--meetings focused on discipline and this topic took up 50%. 4. Nurturing And the double standard of success-- Teachers made it a goal to become More empathetic and help low achieving kids to buy into school. They were able to reduce the amount of low grades and improve student/ teacher relations in some cases. Teachers overall felt a more family atmosphere as a result of teaming.

Table A-1--continued.

Author's Name	Participants	Methodology	Findings
15. Marks, S.U., & Gersten, R. (1993).	12 teachers 1-7 th grade 3 Sped. Teachers	Action Research, Interviews, Audio- taped meetings, Documents, Field notes	If teachers understood the suggestion well and could see that it was meaningful, they were engaged in the coaching process and in efforts to use the suggestion. Teachers perceived needs and previous experience working in a co-teaching or coaching model influence teacher's willingness to engage in the coaching process. It is important to attend to a teacher's preference rather than trying to convince a teacher for a specific strategy. If the needs of teachers were capitalized on, their engagement in the coaching process was higher. High engagement/high impact teachers had no philosophical conflicts with the special education coach. Teachers made either peripheral or core changes in their teaching. Core changes resulted in higher levels of stress between the two participants and sometimes resulted in low engagement. Peripheral changes, those seen as additions to what a teacher already does, were more accepted. Changes occurred in some alteration of teaching strategies and the use of new materials. No change occurred about her beliefs in her role as the teacher. 1. Need to maintain control and to see that kids "get it right" eliminates opportunities for problem solving. 2. Instruction through problem solving is unlikely to occur when science teaching is perceived as a "what" rather than as a "how." Teacher did not appear to be reflective, had successful teaching record which provides little motivation from change. Often teacher does the problem solving for the students. She does not know that content can be learned effectively through problem solving, there is a dichotomy between science teaching/learning and problem solving.
16. Martens, M.L. (1992)	1 6 th grade teacher	Case study, Observations, Interviews, Interview w/ key inform- ants, and Document analysis	

Table A-1—continued.

Author's Name	Participants	Methodology	Findings
17. Martin, K.M. (1995).	3, 6th grade teachers from a middle school	Case study Observation, Interview, Observations of meetings, Documents	Shared vision of curriculum purposes was believed by the teachers to be the key element in determining the success of the team's change efforts. Teacher's personal beliefs and concerns influenced their rationales for the curriculum and their choices of the means to interpret curriculum intentions. Teachers' individual knowledge influenced the ways in which they interpreted the curriculum. Cited team collaboration as a source of shared knowledge and of joint construction of new knowledge. The teachers believed that each played a different role on the team; the diversity contributed to the team's effectiveness. Collaboration And knowledge construction creates knowledge that was not previously available to individual teachers. Teachers better understood the conceptual integration of the content they were teaching. Teachers became more reflective about own teaching through articulating their knowledge and beliefs to others.
18. McIntyre, E. & Kyle, D.W. (1995)	4 teachers at rural Schools, 3 teachers at urban schools	Interviews, Observations, Recorded teach- ers planning ses- sions, All-day meetings	Collaboration allowed them to: develop trust, share info on S, view others as resources, become more metacognitively aware of good teaching, focus on process more than product, honor SS ideas and development, SS benefit from T use of assessment.
19. Meichtry, Y.J. (1990)	2 teams 5th grade team, 6th grade team, 4 teachers	Observations, Informal inter- view, semi & formal inter- views	Team arrangement fostered norms of collaborations and classroom practices were influenced by the collaborative nature of their inter- action with team members. Teacher interactions-Teachers talked with one another about instruction, evaluation, and management of students. Teachers made team decisions. Frequent contact among teachers focusing on common students allowed for reflection about alternative of methods of instruction, evaluation, assistance, and discipline of students. Increased interactions among teachers led to the integration across content areas.

Table A.1--continued.

Author's Name	Participants	Methodology	Findings
20. O'Connor, R., Jenkins, J.R., & Leicester, N. (1992)	10 teachers	Audiotaped collaborative meetings. Structured interviews, Observations, Documents, Observations, Time sampling techniques, Action research plans, Student work, Student eval., Curr. Reviews by Experts and peers, Interviews, Journal entries, Documentation of meetings	Teachers who have academic improvement goals for all children will be more likely to collaborate with a specialist. Collaboration is likely to be ongoing and valued when gen. ed. teachers take responsibility for the intervention. Teachers who can define the learning problem for the child is experiencing will attempt to solve the problem. Collaboration is likely to continue when it assists in maintaining balance between the needs of individuals and the whole class. Elements needed for teachers to become agents of change: recognition and acceptance of the challenge; energy; confidence in oneself and the group; support; time; self-efficacy; having a stake in the willingness and ability to revise; and the ability to recognize and celebrate failures and successes. Driving forces for effective change is the achievement of meaningful products.
21. Oja, S.N., Kull, J.A., & Kelley, F. (1995)	teachers from 4 middle schools	Interviews, Observations, Students' work collected	Teaching and learning occur as a function of teacher beliefs, understandings, and behaviors in the context of specific problems within the classroom. Teachers have to have access to well-articulated ideas that assist them in developing their own ideas. Teachers have to view themselves as learners who work continuously to improve their practices. School structures can assist the learning process, but do not cause learning to occur. A collegial environment can be created through recruitment and socialization, where teachers hold common views about purpose and principles of good practice.
22. Peterson, P.L., McCarthy, S.J., & Elmore, R.F. (1996)	3 elem. schools, 2 writing teachers at each school	Case study, Observations, Interviews	She changed some of her negative views about the new math curriculum. More willing to experiment; has broadened her mathematical perspective.

Table A-1--continued.

Author's Name	Participants	Methodology	Findings
24. Pugach, M.C., & Johnson, L.J. (1996)	Intervention group of 95 teachers, Comparison Group of 96 teachers	# of referrals, Demographic questionnaire, Teacher efficacy scale, Classroom questionnaire, Classroom problem questionnaire	Intervention group showed a 50% decrease in referrals to special education. Intervention group scored higher than the comparison group. The comparison group has less confidence in handling classroom problems. Comparison group scored a less positive teacher affect. For 88% of the teachers, teachers solved problems after engaging in the Peer Collaboration process.
25. Richardson, V., & Anders, P.L. (1994)	38 initial group, 17 focus group, 13 follow-up study	Videotaped lessons, Interviews, Practical-argument sessions	Less reliance on the basal reader, Increased use of prereading strategies, Integration of literature into other subjects, Different practices in grading/assessment, 4/5 shifted from skills-based to more process-oriented focus, and 4/5 moved from authoritative instruction to a teacher-facilitative approach.
26. Shafer, R.A. (1995)	23 k-1 teachers, counselor	Case study, Meetings, Interviews, Documents	Cohesion in the group encourages others to try new ideas. Leadership is shared among members to mutually determine goals.
27. Stein, M.K., & Wang, M.C. (1988)	14 classes (K-4) 3 schools	Observations, Self-in reports questionnaires, Interviews, Implementation Assessment Battery For Adaptive Instruction, Teacher Perceptions and Attitude questionnaire	Positive relationship between teacher success in program implementation and teacher perceptions of self-efficacy for implementing the innovative program. Positive relationship between teacher perceptions of self-efficacy for implementing the innovative program and teacher self-assessment with reference to personal standards. Lack of marked change in teacher-perceived value of the innovative program. There was a positive relationship between teacher-perceived value and teacher perceptions of program efficacy.

Table A-1--continued.

Author's Name	Participants	Methodology	Findings
28. Tillema, H.H. (1995)	146 primary school teachers, 78% women	field study, pre- and post-test measurements, data collected for 2 years, 4-6 weeks training, audio recordings	Teachers still relied on traditional methods in times of trouble. The more teachers' expectations vary from what is presented in training, the more negative their attitudes will be, and thus, they will learn less. A positive attitude about learning, however, promotes knowledge acquisition. Teachers with a lot of experience, did not significantly expand their knowledge base. Most were familiar with the training material. Beliefs exert a strong influence on knowledge acquisition. If learning and knowledge acquisition are going to occur, teachers' beliefs and arguments must be modified. The greater difference between a teacher's expectations of training and that which was being trained led to less learning. The trainer's knowledge of the teachers' beliefs did not aid in changing teacher knowledge or performance. Content based beliefs cannot be changed simply through presentation of information. Teachers beliefs must be challenged for substantial change to occur.
29. Torres, M.N. (1996)	25 K-12 teachers	Meetings, Tape recorded presentations of work in progress reports, Teachers' self reflective evaluation, Staff meeting notes	Affective support: ideas and actions validated and encouraged. Sharing and learning: acquired new ideas, methods, and strategies. Different perspectives: few people commented on importance of peer collaboration offering other perspectives. Challenge: pushed or questioned outside of comfort zone. Expanding teachers' own experience of collaboration. Allowed teachers to build partnerships with their students. Facilitation of risk-taking in trying new things in the classroom: Some of the changes were: changing teaching style, allowing students to have input about problem solving, evaluating the class, giving a choice in learning, and changing the paradigm. Discovering new dimensions of their teaching and students. Teachers saw the need for them to conduct on-going research in their classrooms.

Table A-1--continued.

Author's Name	Participants	Methodology	Findings
30. Vaughn, S., Hughes, M.T., & Schumm, J.S., & Klingner, J. (1998)	7 teachers, 6 researchers	Interviews, Intervention- Validity- Checklists, Observations	Teachers crave instructional practices that can be used with the class as a whole, enhance learning for all students and easy to implement. Commitment to implementation, demonstration lessons, and follow-up meetings enhanced implementation. Teachers learned the global features of the instructional practice. Standardized tests influence teachers' instructional practices. Some teachers did not implement instructional practices regardless of the support available. Lack of time is a problem. Teachers sustained implementation into the second year.
31. Voltz, D.L., Elliot, R.N., & Harris, W.B. (1996)	5 resource room teachers, 26 gen. Ed. Teachers	Interviews, Resource Teacher Gen. Ed. Teacher Interaction Scale	The project increased their knowledge of useful teaching strategies, improved the school performance of students with LD, improved their professional relationship with the resource teacher, improved their ability to meet the needs of students with LD in gen. ed. classes, and had a positive spillover effect for other students. Regularly scheduled conferences allowed them to address the problems of their students more systematically and thoroughly. The project strengthened professional ties. The implementation of this project suggests that the provision of a specific time and framework for collaboration can have a positive impact on the performance of resource teacher roles that promote interaction with gen. Ed. Teachers
32. Warren, L.L., & Payne, B.D. (1997)	12 middle schools in two south- eastern states	Quantitative. The Teacher Efficacy Scale and the Teacher Opinion Questionnaire	Teachers on interdisciplinary teams with common planning time had significantly higher personal teaching efficacy, satisfaction, and commitment to teaching. Teachers in interdisciplinary teams with common planning time had significantly more positive perceptions of managing student behavior. Teachers on interdisciplinary teams with common planning time had significantly more positive perceptions of instruction coordination. Teachers on interdisciplinary teams with and without common planning time had significantly more positive perceptions of cohesiveness. Teachers in interdisciplinary teams with common planning time had significantly more positive perceptions of collaboration.

Table A-1--continued.

Author's Name	Participants	Methodology	Findings
33. Weatherimer, J. (1998)	2 CA middle schools, 1 urban, 1 suburban, 28 interviews at each school	Case study, Participant observation, Interviewing, Documents	How to build, sustain, and advance a teacher professional community: Beliefs matter--the importance is common vision which promotes a clarity and focus for beliefs and values. Structures matter--balance between institutionalized structures and enduring innovation. Structures have to be in place to create participation and manage conflict, even if they are somewhat artificial at first. Individuality and community are unexpected bedfellows--you can maintain individuality and differences of people and use those differences in the community.
34. Wilson, S.M. (1990)	1 teacher	Observation, 2 interviews	Teaching for understanding: levels of knowing, "Press for time, community tests"--only have time to work on procedures and rules. "Competing conceptions of learning and teaching mathematics" --Teacher v. Text. "Knowledge of alternative pedagogical strategies" --Teacher selects use of text based on own understanding about how to teach math. Real Math can provide rationales but all subject to interpretation of reader based on personal understanding. "Competing calls for reform"--Multiple messages/reforms
35. Wood, T., Cobb, P., & Yackel, E. (1991)	2nd grade	Case study, Video-taped lessons, Field notes, Artifacts	Learning consisted of gradual constructions and transformations: a period of dilemmas and conflicts that had to be resolved. Changes occurred in her beliefs about (a) mathematics from rules and procedures to meaningful activity, (b) learning from passivity to interacting and communicating, and c) teaching from transmitting
36. Woolsey, D.P. (1991)	1 1st grade teacher	2yr. naturalistic study, Observations, Interviews, Video-tapes, TORP	Shifted from a belief in phonics and skill orientation to a more meaning based, whole language approach.

APPENDIX B
LETTER OF INFORMED CONSENT

Informed consent
Teacher Participation in Research

February 1998

Dear Teachers,

I am a professor at the University of Florida. My colleagues and I have developed a study to describe the influences of teacher collaboration on instructional and managerial practices. We hope to learn about the influences of the collaborative process in order to better understand how to assist teachers in developing strategies to assist students who experience learning and behavioral problems. Hopefully, the findings of this study can later be used to disseminate information to others interested in establishing teacher collaborative groups.

In this study, researchers will be observing in classrooms of the participating teachers 1-2 times a month for no longer than four hours each visit. During our observations, we will be taking notes on instruction, the response of the students, and any other aspect of management and instruction. Also, we will interview each teacher 2-3 times during the study. These interviews will be recorded on the computer and later coded for confidentiality of teacher identification. Only the researcher will have access to the transcripts. In the interviews, you will not have to answer any questions you do not choose to answer. We will begin observing February 1998 and continue through May 1998.

Each teacher will be given a code for data collection purposes in order to insure confidentiality. No identifying information about teachers or the school site will be used in any written or oral report of this study. All interview and observation data will remain confidential to the extent provided by law and will only be discussed with the individual participant. The results of the study will also not be available to the school administration in order to respect the rights of participants.

There will be no risks and some benefits, such as gaining more information about instruction and management of diverse students, as a result of your participation in this study. You are free to withdraw from participation in this study at any time for any reason. Your participation is strictly voluntary. There will also be no compensation for your participation in this study. We will be willing to discuss this study with you at any time and will answer any questions you have. At the completion of the study, we would like to discuss the findings with you. Hopefully, we will have learned about the influences of collaborative process on instructional and managerial practices. Any questions or concerns about research participants' rights may be directed to the UFIRB office, Box 112250, Gainesville, FL 32611-2250; phone: (352) 392-0433.

Sincerely,

Mary T. Brownell, Ph.D

G315 Norman Hall
University of Florida
Gainesville, FL 32611
(904) 392-0701, ext 249

I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

Participating Teacher's Signature

Date

Investigator's Signature

Date

APPENDIX C
INTERVIEW PROTOCOLS

Interview Protocol #1

June 1997

1. What are the biggest learning challenges you face in teaching diverse learners?
2. Of the challenges you named, which do you handle best? How do you handle these challenges? Give me specific examples.
3. Which of the learning challenges you named, do you find the hardest to overcome? How do you handle these difficult challenges? Give me specific examples.
4. Let's talk about handling some of the other learning challenges you named but haven't discussed. What are some of the things you do to handle them? Give me examples.
5. What are the biggest behavior challenges you face in teaching diverse learners?
6. Of the challenges you mentioned, which do you handle the best? How do you handle these challenges? Give me specific examples.
7. Of the challenges, which do you find hardest to overcome? How do you handle these difficult challenges? Give me specific examples.
8. Let's talk about handling some of the other behavior challenges you named but haven't discussed. What are some of the things you do to handle them? Give me examples.
9. Why do you think you are better at handling the ones you mentioned compared to those you said were more difficult to handle?

Interview Protocol #2

January 1998

1. Do you engage in activities that you feel improve your teaching? If so, what are they?
2. Describe some of the challenges you have faced in teaching this school year.
3. What could you do about these types of challenges(have teacher name specifically what could be done about individual problems listed above)?
4. Have the activities you were talking about allowed you to work toward solving these challenges? If so, how?
5. Which problems did you or did you attempt to solve?
6. What was the result of this effort? How did you know it worked? (did not work)
7. Tell me specific examples about how you know the problem was solved or has improved.
8. Which of the challenges have been difficult to solve?
9. What prevents you from being able to solve this problem?

Interview Protocol # 3

November 1998

Beginning of Year Interview:

4. Does your school have a vision or philosophy for teaching children?
What is it?
5. How does this vision compare to yours (or what is this vision)?
6. Are there any students in your class who you have concerns about?
Why?
7. To what extent are you able to help these students to be successful
academically or behaviorally?
 - a. How did you learn to be effective with these students?
 - b. How did you know to use these strategies?
 - c. What supports would you need to be more effective?
8. In the first question, I asked you about students in your class you
were concerned about. Of the students you mentioned, who do you
have to most concerns about? Is this student in special education?
What are the strengths and needs of this student?
9. What kind of planning do you do to address this student's
instructional or behavior problems?
 - a. What kind of strategies do you use to address this student's
instructional or behavioral problems?
 - b. How are the planning or strategies you use for this student the
same or different from those used for other students in the
class?
 - c. Have these strategies been successful? If not, what do you plan
to do next?
10. What are your long-term goals for this student?
 - a. How are they the same as or different from the long-term goals
for other students?
11. What is you plan for assessing this student's progress?
 - a. How is this similar to or different from the ways you assess the
other students?
12. What kind of help is available for assisting you with instructing
difficult to teach and manage students?

- a. In what way have these sources of support been helpful?
 - b. How helpful are these sources of support for instructing the other students in your class?
 - c. What role has the building administration played in providing such support?
 - d. In what ways would you like for the building administrators to support you more?
13. Are there any barriers in your district, school, or classroom to providing instruction to difficult to teach and manage students?
- a. How are these barriers the same as or different from the barriers you encounter in teaching all other students in your class?
14. What else do you need to know to successfully instruct students with behavioral or academic problems?
- a. How is this similar or different from the information you still need to acquire about planning for all other students?

Interview Protocol 4
May 1999

1. Were there any beneficial aspects of participating in the TLC?

If yes: "Could you list the specific ways in which the TLC has been helpful to you?"

If no: go to question 2

2. Were there any aspects of participating in the TLC that were not (less) beneficial?

3. What are your beliefs about including high risk learners and students with disabilities in your classroom? Have your beliefs changed as a result of participating in the TLC?

4. How helpful or not helpful has TLC participation been for teaching and managing high risk learners and students with disabilities?

5. What could be done to improve the effectiveness of the TLC process?

6. What aspects of the TLC process should remain the same?

7. Has the administration supported the TLC process in your school?

How?

If not, why not?

8. Have you had sufficient time to work in the TLC process?

9. How helpful or unhelpful has working with other TLC teachers been?

Give prompts only if they don't understand the question:

feedback on ideas and problems

problem solving

learning new ideas

working together on planning, teaching, etc.

support for trying new ideas

10. What aspects of working with TLC teachers needs to change?

11. So far in the TLC process, do you feel more confident, less confident, or the same about solving problems related to teaching high risk learners and students with disabilities?

12. So far in the TLC process, do you feel more confident, less confident, or the same about your TLC colleagues' ability to help you solve these problems?
13. How do you think non-TLC colleagues in your school perceive the TLCs?

APPENDIX D
DEBRIEFING QUESTIONS

POSTOBSERVATION QUESTIONS
(GUIDE IN REFLECTING WITH TEACHERS)

1. Why did you select to teach this particular skill or topic?
2. How do you think the lesson went?
3. Were there any students that you had concerns about? Why?
4. How did you address those concerns?
5. What will you do in the future to address these concerns?

APPENDIX E
PATHWISE 19 CRITERIA

Pathwise
Educational Testing Service

Teacher Performance Assessment

Assessment Criteria

DOMAIN A: Organizing Content Knowledge for Student Learning

Criterion A1: Becoming familiar with relevant aspects of students' background knowledge and experiences

Criterion A2: Articulating clear learning goals for the lesson that are appropriate to the students

Criterion A3: Demonstrating an understanding of the connections between the content that was learned previously, the current content, and the content that remains to be learned in the future

Criterion A4: Creating or selecting teaching methods, learning activities, and instructional materials of other resources that are appropriate to the students and that are aligned with the goals of the lesson

Criterion A5: Creating or selecting evaluation strategies that are appropriate for the students and that are aligned with the goals of the lesson

DOMAIN B: Creating an Environment for Student Learning

Criterion B1: Creating a climate that promotes fairness

Criterion B2: Establishing and maintaining rapport with students

Criterion B3: Communicating challenging learning expectations to each student

Criterion B4: Establishing and maintaining consistent standards of classroom behavior

Criterion B5: Making the physical environment as safe and conducive to learning as possible

DOMAIN C: Teaching for Student Learning

Criterion C1: Making learning goals and instructional procedures clear to students

Criterion C2: Making content comprehensible to students

Criterion C3: Encouraging students to extend their thinking

Criterion C4: Monitoring students' understanding of content through a variety of means, providing feedback to students to assist learning, and adjusting learning activities as the situation demands

Criterion C5: Using instructional time effectively

DOMAIN D: Teacher Professionalism

Criterion D1: Reflecting on the extent to which the learning goals were met

Criterion D2: Demonstrating a sense of efficacy

Criterion D3: Building professional relationships with colleagues to share teaching insights and to coordinate learning activities for students

Criterion D4: Communicating with parents or guardians about student learning

APPENDIX F
ACTION PLANS/NEWSPAPER CLIPPINGS

♥♥♥ TLC Action Plan ♥♥♥

Instructional Goal

Your action to accomplish the goal

Time line for accomplishing the goal

How will you collect data to determine outcome (evaluation method)

Management Goal

Your action to accomplish the goal

Time line for accomplishing the goal

How will you collect data to determine outcome (evaluation method)

End of the Year Action Plan

The skill I will target

The students that will be involved

The assessment that I will use for baseline/final evaluation data

How the students will practice the skill

How often the students will practice (i.e., 5 minutes from 9:00-9:05 everyday)

Days of Week:

Specific Time:

Duration:

How I will keep track of data (consider how the students could chart their progress)

Sample:

Basic subtraction facts 0-19

Target students: Susie, Jimmy, Carl, and Donna

I will use a sheet of subtraction problems that are displayed in mixed order and time students for a minute. This is my baseline data.

I will pair all my students and they will use flash cards and quiz each other every day from 9:05-9:10. (Each student will have an opportunity to practice for 2 minutes each. Every T/Th I will use the minute timing to collect data. I will make a chart that shows the data for each of the 4 students; students will meet with me on Friday to see their progress and to set goals)

I will use the timing sheets to determine final progress of my students at the end of eight weeks.

Florida Times Union

November 11, 1998

Day
Fla.

Teachers offered cohorts

UF faculty sharing
teaching methods

By Veronica Chapin
Staff writer

Using a philosophy of the more you know the more you grow, faculty at Hogan-Spring Glen Elementary and professors at the University of Florida have teamed up to improve teaching and management methods.

With a federal grant to implement two programs, The Teacher Learning Cohorts and Reading Rescue for Elementary Students, faculty are able to take a proactive role in educating their students.

The TLC program started during the 1996-97 school year, with a goal of improving teaching skills in the classroom using observation, discussion, implementation and assessment.

Staff from the University of Florida trained in strategic problem-solving, help elementary school teachers learn new techniques to help reach children at risk for learning problems.

"The program is similar to having staff provide professional service on a continuous basis," said Hogan-Spring Glen Principal Susan Schondelmaier. "They [UF personnel] have been able to go into the classroom and see what the teachers are doing and make suggestions."

Although the programs are time-consuming, Schondelmaier said they are able to help students they couldn't reach before.

"It's a stretch. We really had to work at changing some of our schedules and giving up some of our time for other things to make it work," she said. "I think we owe it to our society and our community to do the very best we can for all our children."

The university currently has three professors and two graduate assistants working within the elementary school, said UF research assistant Tamar Riley.

"Our [TLC] work wasn't too pretty our first year here," Riley said. "It took us a while to get our feet wet."

Riley said the teachers are able to decide what problems they want to address in their classroom, then work together to observe each other and learn while providing feedback.

Riley said Hogan-Spring Glen was chosen for the study because it had shown the most interest in getting involved in this type of program.

The Reading Rescue program was implemented at the elementary school this year and is

See COHORTS, Page 6

Cohorts

From Page 1

already serving 15 first-grade students. The one-on-one tutoring program provides 30-minute reading lessons daily to accelerate literacy development for students at risk of reading failure.

"The main thing we have to focus on is changing our thinking about teaching," said fourth-grade reading teacher Carol Carter. "I'm absolutely thrilled that our school has had the opportunity to be involved."

Schondelmaier said. "It has promoted collegiality among the teachers who have participated in the program."

"It's nice taking an interest in

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BIOGRAPHICAL SKETCH

Tamar F. Riley was born on April 7, 1967, in Pasadena, California. Close to a year later her parents adopted two boys, Tommy and Brandon. The following year Tamar's parents divorced, and her mother kept custody of them. Her father remarried when she was three, and Tamar gained three new siblings--Allen, Larry, and Allison. Three years later Tamar's brother Doug joined the family, and seven years following, her sister Ashley was born.

Tamar lived with her mother until she was 15 years old, and then she moved in with her father, stepmother, and seven siblings. Her parents had always stressed the importance of education, and seven out of eight of their children have attended college. Tamar's parents were always encouraging and supportive in all of her academic endeavors.

Tamar attended Liberty University where she majored in elementary education with a minor in cross-cultural studies. She had two opportunities to travel abroad while in college. Her first experience was in Brazil for three and a half weeks where she saw children, as well as adults, living in tremendous poverty. This first experience sparked her desire to work with those of diverse cultural backgrounds and led to her interest in issues of equity.

Three years later Tamar went to Kenya with a team of nine other college students on a four-month work project. Her team worked with the poorest tribe in Kenya, the Turkana, known as the beggar tribe. While in Turkana, she taught at the local school where 60 students were crowded into a concrete building built for 30. She also worked in a tutoring clinic, which assisted struggling students learning to read English. This experience was the first time in which she encountered students with learning problems. Living without electricity, a limited water supply, and among intense poverty helped her to realize that not all people had the privileges that she had been afforded since birth. Tamar came back from Kenya a different person with a new desire to help those who needed support to be successful. Much of her understanding and beliefs about race, class, and gender were challenged by her trip.

Tamar graduated from Liberty with a bachelor's degree in elementary education and soon started graduate school at the University of Florida. She received her degree in special education with a specialization in learning disabilities and an endorsement in gifted. Tamar's first year of teaching was in a fifth-grade general education classroom. She had many students who received special education services, had different learning levels, and exhibited a variety of behavioral problems. She realized her preparation in general and special education assisted her ability to teach such a diverse population. The next two years she taught in a fourth-grade self-contained gifted classroom at a gifted center school. The combination of both teacher preparation programs allowed her to have the knowledge of academic content

as well as the knowledge to implement strategies and modifications in the curriculum while teaching students with diverse educational needs.

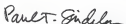
As a result of these teaching experiences, Tamar became interested in a doctoral program in special education with an emphasis in teacher education. Tamar's work with teachers in a general education classroom led to her interest in collaborative teacher education programs that jointly prepared special and general education teachers. Additionally, she became interested in assisting general education teachers with including students who had challenging learning problems. Tamar also has interests in issues of race, class, and gender and how she can make education accessible to all students.

I certify that I have read this study and that, in my opinion, it conforms to the acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



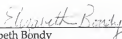
Mary T. Brownell, Chair
Associate Professor of Special Education

I certify that I have read this study and that, in my opinion, it conforms to the acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



Paul T. Sindelar, Cochair
Professor of Special Education

I certify that I have read this study and that, in my opinion, it conforms to the acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



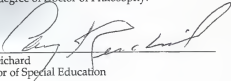
Elizabeth Bondy
Associate Professor of Teaching and Learning

I certify that I have read this study and that, in my opinion, it conforms to the acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



Karen Kilgore
Assistant Scholar of Special Education

I certify that I have read this study and that, in my opinion, it conforms to the acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation for the degree of Doctor of Philosophy.



Cary Reichard
Professor of Special Education

This dissertation was submitted to the Graduate Faculty of the College of Education and to the Graduate School and was accepted as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

December 2000



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